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(54) Title: NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

(57) Abstract:

NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

1. TECHNICAL FIELD

The present invention provides novel polynucleotides and proteins encoded by such polynucleotides, along with uses for these polynucleotides and proteins, for example in therapeutic, diagnostic and research methods.

2. BACKGROUND

Technology aimed at the discovery of protein factors (including *e.g.*, cytokines, such as lymphokines, interferons, CSFs, chemokines, and interleukins) has matured rapidly over the past decade. The now routine hybridization cloning and expression cloning techniques clone novel polynucleotides "directly" in the sense that they rely on information directly related to the discovered protein (*i.e.*, partial DNA/amino acid sequence of the protein in the case of hybridization cloning; activity of the protein in the case of expression cloning). More recent "indirect" cloning techniques such as signal sequence cloning, which isolates DNA sequences based on the presence of a now well-recognized secretory leader sequence motif, as well as various PCR-based or low stringency hybridization-based cloning techniques, have advanced the state of the art by making available large numbers of DNA/amino acid sequences for proteins that are known to have biological activity, for example, by virtue of their secreted nature in the case of leader sequence cloning, by virtue of their cell or tissue source in the case of PCR-based techniques, or by virtue of structural similarity to other genes of known biological activity.

Identified polynucleotide and polypeptide sequences have numerous applications in, for example, diagnostics, forensics, gene mapping; identification of mutations responsible for genetic disorders or other traits, to assess biodiversity, and to produce many other types of data and products dependent on DNA and amino acid sequences.

3. SUMMARY OF THE INVENTION

The compositions of the present invention include novel isolated polypeptides, novel isolated polynucleotides encoding such polypeptides, including recombinant DNA molecules, cloned genes or degenerate variants thereof, especially naturally occurring variants such as allelic variants, antisense polynucleotide molecules, and antibodies that specifically recognize one or more epitopes present on such polypeptides, as well as hybridomas producing such antibodies.

The compositions of the present invention additionally include vectors, including expression vectors, containing the polynucleotides of the invention, cells genetically engineered to contain such polynucleotides and cells genetically engineered to express such polynucleotides.

The present invention relates to a collection or library of at least one novel nucleic acid sequence assembled from expressed sequence tags (ESTs) isolated mainly by sequencing by hybridization (SBH), and in some cases, sequences obtained from one or more public databases. The invention relates also to the proteins encoded by such polynucleotides, along with therapeutic, diagnostic and research utilities for these polynucleotides and proteins. These nucleic acid sequences are designated as SEQ ID NO: 1-1009. The polypeptides sequences are designated SEQ ID NO: 1010-2018. The nucleic acids and polypeptides are provided in the Sequence Listing. In the nucleic acids provided in the Sequence Listing, A is adenosine; C is cytosine; G is guanine; T is thymine; and N is any of the four bases. In the amino acids provided in the Sequence Listing, * corresponds to the stop codon.

The nucleic acid sequences of the present invention also include, nucleic acid sequences that hybridize to the complement of SEQ ID NO:1-1009 under stringent hybridization conditions; nucleic acid sequences which are allelic variants or species homologues of any of the nucleic acid sequences recited above, or nucleic acid sequences that encode a peptide comprising a specific domain or truncation of the peptides encoded by SEQ ID NO:1-1009. A polynucleotide comprising a nucleotide sequence having at least 90% identity to an identifying sequence of SEQ ID NO:1-1009 or a degenerate variant or fragment thereof. The identifying sequence can be 100 base pairs in length.

The nucleic acid sequences of the present invention also include the sequence information from the nucleic acid sequences of SEQ ID NO:1-1009. The sequence information can be a segment of any one of SEQ ID NO:1-1009 that uniquely identifies or represents the sequence information of SEQ ID NO:1-1009.

A collection as used in this application can be a collection of only one polynucleotide. The collection of sequence information or identifying information of each sequence can be provided on a nucleic acid array. In one embodiment, segments of sequence information is provided on a nucleic acid array to detect the polynucleotide that contains the segment. The array can be designed to detect full-match or mismatch to the polynucleotide that contains the segment. The collection can also be provided in a computer-readable format.

This invention also includes the reverse or direct complement of any of the nucleic acid sequences recited above; cloning or expression vectors containing the nucleic acid sequences; and host cells or organisms transformed with these expression vectors. Nucleic acid sequences (or their reverse or direct complements) according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology, such as use as hybridization probes, use as primers for PCR, use in an array, use in computer-readable media, use in sequencing

full-length genes, use for chromosome and gene mapping, use in the recombinant production of protein, and use in the generation of anti-sense DNA or RNA, their chemical analogs and the like.

In a preferred embodiment, the nucleic acid sequences of SEQ ID NO:1-1009 or novel segments or parts of the nucleic acids of the invention are used as primers in expression assays that are well known in the art. In a particularly preferred embodiment, the nucleic acid sequences of SEQ ID NO:1-1009 or novel segments or parts of the nucleic acids provided herein are used in diagnostics for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

The isolated polynucleotides of the invention include, but are not limited to, a polynucleotide comprising any one of the nucleotide sequences set forth in SEQ ID NO:1-1009; a polynucleotide comprising any of the full length protein coding sequences of SEQ ID NO:1 - 1009; and a polynucleotide comprising any of the nucleotide sequences of the mature protein coding sequences of SEQ ID NO: 1- 1009. The polynucleotides of the present invention also include, but are not limited to, a polynucleotide that hybridizes under stringent hybridization conditions to (a) the complement of any one of the nucleotide sequences set forth in SEQ ID NO:1-1009; (b) a nucleotide sequence encoding any one of the amino acid sequences set forth in the Sequence Listing (*e.g.*, SEQ ID NO: 1010-2018); (c) a polynucleotide which is an allelic variant of any polynucleotides recited above; (d) a polynucleotide which encodes a species homolog (*e.g.* orthologs) of any of the proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a specific domain or truncation of any of the polypeptides comprising an amino acid sequence set forth in the Sequence Listing.

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising any of the amino acid sequences set forth in the Sequence Listing; or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides with biological activity that are encoded by (a) any of the polynucleotides having a nucleotide sequence set forth in SEQ ID NO:1-1009; or (b) polynucleotides that hybridize to the complement of the polynucleotides of (a) under stringent hybridization conditions. Biologically or immunologically active variants of any of the polypeptide sequences in the Sequence Listing, and "substantial equivalents" thereof (*e.g.*, with at least about 65%, 70%, 75%, 80%, 85%, 90%, 95%, 98% or 99% amino acid sequence identity) that preferably retain biological activity are also contemplated. The polypeptides of the invention may be wholly or partially chemically synthesized but are preferably produced by recombinant means using the genetically engineered cells (*e.g.* host cells) of the invention.

The invention also provides compositions comprising a polypeptide of the invention. Polypeptide compositions of the invention may further comprise an acceptable carrier, such as a hydrophilic, *e.g.*, pharmaceutically acceptable, carrier.

The invention also provides host cells transformed or transfected with a polynucleotide of the invention.

The invention also relates to methods for producing a polypeptide of the invention comprising growing a culture of the host cells of the invention in a suitable culture medium under conditions permitting expression of the desired polypeptide, and purifying the polypeptide from the culture or from the host cells. Preferred embodiments include those in which the protein produced by such process is a mature form of the protein.

Polynucleotides according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology. These techniques include use as hybridization probes, use as oligomers, or primers, for PCR, use for chromosome and gene mapping, use in the recombinant production of protein, and use in generation of anti-sense DNA or RNA, their chemical analogs and the like. For example, when the expression of an mRNA is largely restricted to a particular cell or tissue type, polynucleotides of the invention can be used as hybridization probes to detect the presence of the particular cell or tissue mRNA in a sample using, *e.g., in situ* hybridization.

In other exemplary embodiments, the polynucleotides are used in diagnostics as expressed sequence tags for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

The polypeptides according to the invention can be used in a variety of conventional procedures and methods that are currently applied to other proteins. For example, a polypeptide of the invention can be used to generate an antibody that specifically binds the polypeptide. Such antibodies, particularly monoclonal antibodies, are useful for detecting or quantitating the polypeptide in tissue. The polypeptides of the invention can also be used as molecular weight markers, and as a food supplement.

Methods are also provided for preventing, treating, or ameliorating a medical condition which comprises the step of administering to a mammalian subject a therapeutically effective amount of a composition comprising a polypeptide of the present invention and a pharmaceutically acceptable carrier.

In particular, the polypeptides and polynucleotides of the invention can be utilized, for example, in methods for the prevention and/or treatment of disorders involving aberrant protein expression or biological activity.

The present invention further relates to methods for detecting the presence of the polynucleotides or polypeptides of the invention in a sample. Such methods can, for example, be utilized as part of prognostic and diagnostic evaluation of disorders as recited herein and for the identification of subjects exhibiting a predisposition to such conditions. The invention provides a method for detecting the polynucleotides of the invention in a sample, comprising contacting the sample with a compound that binds to and forms a complex with the polynucleotide of interest for a period sufficient to form the complex and under conditions sufficient to form a complex and detecting the complex such that if a complex is detected, the polynucleotide of interest is detected. The invention also provides a method for detecting the polypeptides of the invention in a sample comprising contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex and detecting the formation of the complex such that if a complex is formed, the polypeptide is detected.

The invention also provides kits comprising polynucleotide probes and/or monoclonal antibodies, and optionally quantitative standards, for carrying out methods of the invention. Furthermore, the invention provides methods for evaluating the efficacy of drugs, and monitoring the progress of patients, involved in clinical trials for the treatment of disorders as recited above.

The invention also provides methods for the identification of compounds that modulate (*i.e.*, increase or decrease) the expression or activity of the polynucleotides and/or polypeptides of the invention. Such methods can be utilized, for example, for the identification of compounds that can ameliorate symptoms of disorders as recited herein. Such methods can include, but are not limited to, assays for identifying compounds and other substances that interact with (*e.g.*, bind to) the polypeptides of the invention. The invention provides a method for identifying a compound that binds to the polypeptides of the invention comprising contacting the compound with a polypeptide of the invention in a cell for a time sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a reporter gene sequence in the cell; and detecting the complex by detecting the reporter gene sequence expression such that if expression of the reporter gene is detected the compound the binds to a polypeptide of the invention is identified.

The methods of the invention also provides methods for treatment which involve the administration of the polynucleotides or polypeptides of the invention to individuals exhibiting symptoms or tendencies. In addition, the invention encompasses methods for treating diseases or disorders as recited herein comprising administering compounds and other substances that modulate the overall activity of the target gene products. Compounds and other substances can

effect such modulation either on the level of target gene/protein expression or target protein activity.

The polypeptides of the present invention and the polynucleotides encoding them are also useful for the same functions known to one of skill in the art as the polypeptides and polynucleotides to which they have homology (set forth in Table 2). If no homology is set forth for a sequence, then the polypeptides and polynucleotides of the present invention are useful for a variety of applications, as described herein, including use in arrays for detection.

4. DETAILED DESCRIPTION OF THE INVENTION

4.1 DEFINITIONS

It must be noted that as used herein and in the appended claims, the singular forms “a”, “an” and “the” include plural references unless the context clearly dictates otherwise.

The term "active" refers to those forms of the polypeptide which retain the biologic and/or immunologic activities of any naturally occurring polypeptide. According to the invention, the terms “biologically active” or “biological activity” refer to a protein or peptide having structural, regulatory or biochemical functions of a naturally occurring molecule. Likewise “immunologically active” or “immunological activity” refers to the capability of the natural, recombinant or synthetic polypeptide to induce a specific immune response in appropriate animals or cells and to bind with specific antibodies.

The term "activated cells” as used in this application are those cells which are engaged in extracellular or intracellular membrane trafficking, including the export of secretory or enzymatic molecules as part of a normal or disease process.

The terms “complementary” or “complementarity” refer to the natural binding of polynucleotides by base pairing. For example, the sequence 5’-AGT-3’ binds to the complementary sequence 3’-TCA-5’. Complementarity between two single-stranded molecules may be “partial” such that only some of the nucleic acids bind or it may be “complete” such that total complementarity exists between the single stranded molecules. The degree of complementarity between the nucleic acid strands has significant effects on the efficiency and strength of the hybridization between the nucleic acid strands.

The term “embryonic stem cells (ES)” refers to a cell that can give rise to many differentiated cell types in an embryo or an adult, including the germ cells. The term “germ line stem cells (GSCs)” refers to stem cells derived from primordial stem cells that provide a steady and continuous source of germ cells for the production of gametes. The term “primordial germ

cells (PGCs)" refers to a small population of cells set aside from other cell lineages particu... from the yolk sac, mesenteries, or gonadal ridges during embryogenesis that have the potential to differentiate into germ cells and other cells. PGCs are the source from which GSCs and ES cells are derived The PGCs, the GSCs and the ES cells are capable of self-renewal. Thus these cells not only populate the germ line and give rise to a plurality of terminally differentiated cells that comprise the adult specialized organs, but are able to regenerate themselves.

The term "expression modulating fragment," EMF, means a series of nucleotides which modulates the expression of an operably linked ORF or another EMF.

As used herein, a sequence is said to "modulate the expression of an operably linked sequence" when the expression of the sequence is altered by the presence of the EMF. EMFs include, but are not limited to, promoters, and promoter modulating sequences (inducible elements). One class of EMFs are nucleic acid fragments which induce the expression of an operably linked ORF in response to a specific regulatory factor or physiological event.

The terms "nucleotide sequence" or "nucleic acid" or "polynucleotide" or "oligonculeotide" are used interchangeably and refer to a heteropolymer of nucleotides or the sequence of these nucleotides. These phrases also refer to DNA or RNA of genomic or synthetic origin which may be single-stranded or double-stranded and may represent the sense or the antisense strand, to peptide nucleic acid (PNA) or to any DNA-like or RNA-like material. In the sequences herein A is adenine, C is cytosine, T is thymine, G is guanine and N is A, C, G or T (U). It is contemplated that where the polynucleotide is RNA, the T (thymine) in the sequences provided herein is substituted with U (uracil). Generally, nucleic acid segments provided by this invention may be assembled from fragments of the genome and short oligonucleotide linkers, or from a series of oligonucleotides, or from individual nucleotides, to provide a synthetic nucleic acid which is capable of being expressed in a recombinant transcriptional unit comprising regulatory elements derived from a microbial or viral operon, or a eukaryotic gene.

The terms "oligonucleotide fragment" or a "polynucleotide fragment", "portion," or "segment" or "probe" or "primer" are used interchangeably and refer to a sequence of nucleotide residues which are at least about 5 nucleotides, more preferably at least about 7 nucleotides, more preferably at least about 9 nucleotides, more preferably at least about 11 nucleotides and most preferably at least about 17 nucleotides. The fragment is preferably less than about 500 nucleotides, preferably less than about 200 nucleotides, more preferably less than about 100 nucleotides, more preferably less than about 50 nucleotides and most preferably less than 30 nucleotides. Preferably the probe is from about 6 nucleotides to about 200 nucleotides, preferably from about 15 to about 50 nucleotides, more preferably from about 17 to 30 nucleotides and most preferably from about 20 to 25 nucleotides. Preferably the fragments can

be used in polymerase chain reaction (PCR), various hybridization procedures or microarray procedures to identify or amplify identical or related parts of mRNA or DNA molecules. A fragment or segment may uniquely identify each polynucleotide sequence of the present invention. Preferably the fragment comprises a sequence substantially similar to any one of SEQ ID NOs:1-1009.

Probes may, for example, be used to determine whether specific mRNA molecules are present in a cell or tissue or to isolate similar nucleic acid sequences from chromosomal DNA as described by Walsh et al. (Walsh, P.S. et al., 1992, PCR Methods Appl 1:241-250). They may be labeled by nick translation, Klenow fill-in reaction, PCR, or other methods well known in the art. Probes of the present invention, their preparation and/or labeling are elaborated in Sambrook, J. et al., 1989, Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, NY; or Ausubel, F.M. et al., 1989, Current Protocols in Molecular Biology, John Wiley & Sons, New York NY, both of which are incorporated herein by reference in their entirety.

The nucleic acid sequences of the present invention also include the sequence information from the nucleic acid sequences of SEQ ID NO:1-1009. The sequence information can be a segment of any one of SEQ ID NO:1-1009 that uniquely identifies or represents the sequence information of that sequence of SEQ ID NO:1-1009. One such segment can be a twenty-mer nucleic acid sequence because the probability that a twenty-mer is fully matched in the human genome is 1 in 300. In the human genome, there are three billion base pairs in one set of chromosomes. Because 4^{20} possible twenty-mers exist, there are 300 times more twenty-mers than there are base pairs in a set of human chromosomes. Using the same analysis, the probability for a seventeen-mer to be fully matched in the human genome is approximately 1 in 5. When these segments are used in arrays for expression studies, fifteen-mer segments can be used. The probability that the fifteen-mer is fully matched in the expressed sequences is also approximately one in five because expressed sequences comprise less than approximately 5% of the entire genome sequence.

Similarly, when using sequence information for detecting a single mismatch, a segment can be a twenty-five mer. The probability that the twenty-five mer would appear in a human genome with a single mismatch is calculated by multiplying the probability for a full match ($1 \div 4^{25}$) times the increased probability for mismatch at each nucleotide position (3 x 25). The probability that an eighteen mer with a single mismatch can be detected in an array for expression studies is approximately one in five. The probability that a twenty-mer with a single mismatch can be detected in a human genome is approximately one in five.

The term "open reading frame," ORF, means a series of nucleotide triplets coding for amino acids without any termination codons and is a sequence translatable into protein.

The terms "operably linked" or "operably associated" refer to functionally related nucleic acid sequences. For example, a promoter is operably associated or operably linked with a coding sequence if the promoter controls the transcription of the coding sequence. While operably linked nucleic acid sequences can be contiguous and in the same reading frame, certain genetic elements *e.g.* repressor genes are not contiguously linked to the coding sequence but still control transcription/translation of the coding sequence.

The term "pluripotent" refers to the capability of a cell to differentiate into a number of differentiated cell types that are present in an adult organism. A pluripotent cell is restricted in its differentiation capability in comparison to a totipotent cell.

The terms "polypeptide" or "peptide" or "amino acid sequence" refer to an oligopeptide, peptide, polypeptide or protein sequence or fragment thereof and to naturally occurring or synthetic molecules. A polypeptide "fragment," "portion," or "segment" is a stretch of amino acid residues of at least about 5 amino acids, preferably at least about 7 amino acids, more preferably at least about 9 amino acids and most preferably at least about 17 or more amino acids. The peptide preferably is not greater than about 200 amino acids, more preferably less than 150 amino acids and most preferably less than 100 amino acids. Preferably the peptide is from about 5 to about 200 amino acids. To be active, any polypeptide must have sufficient length to display biological and/or immunological activity.

The term "naturally occurring polypeptide" refers to polypeptides produced by cells that have not been genetically engineered and specifically contemplates various polypeptides arising from post-translational modifications of the polypeptide including, but not limited to, acetylation, carboxylation, glycosylation, phosphorylation, lipidation and acylation.

The term "translated protein coding portion" means a sequence which encodes for the full length protein which may include any leader sequence or any processing sequence.

The term "mature protein coding sequence" means a sequence which encodes a peptide or protein without a signal or leader sequence. The "mature protein portion" means that portion of the protein which does not include a signal or leader sequence. The peptide may have been produced by processing in the cell which removes any leader/signal sequence. The mature protein portion may or may not include the initial methionine residue. The methionine residue may be removed from the protein during processing in the cell. The peptide may be produced synthetically or the protein may have been produced using a polynucleotide only encoding for the mature protein coding sequence.

The term "derivative" refers to polypeptides chemically modified by such techniques as ubiquitination, labeling (*e.g.*, with radionuclides or various enzymes), covalent polymer attachment such as pegylation (derivatization with polyethylene glycol) and insertion or substitution by chemical synthesis of amino acids such as ornithine, which do not normally occur in human proteins.

The term "variant"(or "analog") refers to any polypeptide differing from naturally occurring polypeptides by amino acid insertions, deletions, and substitutions, created using, *e g.*, recombinant DNA techniques. Guidance in determining which amino acid residues may be replaced, added or deleted without abolishing activities of interest, may be found by comparing the sequence of the particular polypeptide with that of homologous peptides and minimizing the number of amino acid sequence changes made in regions of high homology (conserved regions) or by replacing amino acids with consensus sequence.

Alternatively, recombinant variants encoding these same or similar polypeptides may be synthesized or selected by making use of the "redundancy" in the genetic code. Various codon substitutions, such as the silent changes which produce various restriction sites, may be introduced to optimize cloning into a plasmid or viral vector or expression in a particular prokaryotic or eukaryotic system. Mutations in the polynucleotide sequence may be reflected in the polypeptide or domains of other peptides added to the polypeptide to modify the properties of any part of the polypeptide, to change characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate.

Preferably, amino acid "substitutions" are the result of replacing one amino acid with another amino acid having similar structural and/or chemical properties, *i.e.*, conservative amino acid replacements. "Conservative" amino acid substitutions may be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity, and/or the amphipathic nature of the residues involved. For example, nonpolar (hydrophobic) amino acids include alanine, leucine, isoleucine, valine, proline, phenylalanine, tryptophan, and methionine; polar neutral amino acids include glycine, serine, threonine, cysteine, tyrosine, asparagine, and glutamine; positively charged (basic) amino acids include arginine, lysine, and histidine; and negatively charged (acidic) amino acids include aspartic acid and glutamic acid. "Insertions" or "deletions" are preferably in the range of about 1 to 20 amino acids, more preferably 1 to 10 amino acids. The variation allowed may be experimentally determined by systematically making insertions, deletions, or substitutions of amino acids in a polypeptide molecule using recombinant DNA techniques and assaying the resulting recombinant variants for activity.

Alternatively, where alteration of function is desired, insertions, deletions or non-conservative alterations can be engineered to produce altered polypeptides. Such alterations

can, for example, alter one or more of the biological functions or biochemical characteristics of the polypeptides of the invention. For example, such alterations may change polypeptide characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate. Further, such alterations can be selected so as to generate polypeptides that are better suited for expression, scale up and the like in the host cells chosen for expression. For example, cysteine residues can be deleted or substituted with another amino acid residue in order to eliminate disulfide bridges.

The terms "purified" or "substantially purified" as used herein denotes that the indicated nucleic acid or polypeptide is present in the substantial absence of other biological macromolecules, *e.g.*, polynucleotides, proteins, and the like. In one embodiment, the polynucleotide or polypeptide is purified such that it constitutes at least 95% by weight, more preferably at least 99% by weight, of the indicated biological macromolecules present (but water, buffers, and other small molecules, especially molecules having a molecular weight of less than 1000 daltons, can be present).

The term "isolated" as used herein refers to a nucleic acid or polypeptide separated from at least one other component (*e.g.*, nucleic acid or polypeptide) present with the nucleic acid or polypeptide in its natural source. In one embodiment, the nucleic acid or polypeptide is found in the presence of (if anything) only a solvent, buffer, ion, or other component normally present in a solution of the same. The terms "isolated" and "purified" do not encompass nucleic acids or polypeptides present in their natural source.

The term "recombinant," when used herein to refer to a polypeptide or protein, means that a polypeptide or protein is derived from recombinant (*e.g.*, microbial, insect, or mammalian) expression systems. "Microbial" refers to recombinant polypeptides or proteins made in bacterial or fungal (*e.g.*, yeast) expression systems. As a product, "recombinant microbial" defines a polypeptide or protein essentially free of native endogenous substances and unaccompanied by associated native glycosylation. Polypeptides or proteins expressed in most bacterial cultures, *e.g., E. coli*, will be free of glycosylation modifications; polypeptides or proteins expressed in yeast will have a glycosylation pattern in general different from those expressed in mammalian cells.

The term "recombinant expression vehicle or vector" refers to a plasmid or phage or virus or vector, for expressing a polypeptide from a DNA (RNA) sequence. An expression vehicle can comprise a transcriptional unit comprising an assembly of (1) a genetic element or elements having a regulatory role in gene expression, for example, promoters or enhancers, (2) a structural or coding sequence which is transcribed into mRNA and translated into protein, and (3) appropriate transcription initiation and termination sequences. Structural units intended for use

in yeast or eukaryotic expression systems preferably include a leader sequence enabling extracellular secretion of translated protein by a host cell. Alternatively, where recombinant protein is expressed without a leader or transport sequence, it may include an amino terminal methionine residue. This residue may or may not be subsequently cleaved from the expressed recombinant protein to provide a final product.

The term "recombinant expression system" means host cells which have stably integrated a recombinant transcriptional unit into chromosomal DNA or carry the recombinant transcriptional unit extrachromosomally. Recombinant expression systems as defined herein will express heterologous polypeptides or proteins upon induction of the regulatory elements linked to the DNA segment or synthetic gene to be expressed. This term also means host cells which have stably integrated a recombinant genetic element or elements having a regulatory role in gene expression, for example, promoters or enhancers. Recombinant expression systems as defined herein will express polypeptides or proteins endogenous to the cell upon induction of the regulatory elements linked to the endogenous DNA segment or gene to be expressed. The cells can be prokaryotic or eukaryotic.

The term "secreted" includes a protein that is transported across or through a membrane, including transport as a result of signal sequences in its amino acid sequence when it is expressed in a suitable host cell. "Secreted" proteins include without limitation proteins secreted wholly (*e.g.*, soluble proteins) or partially (*e.g.*, receptors) from the cell in which they are expressed. "Secreted" proteins also include without limitation proteins that are transported across the membrane of the endoplasmic reticulum. "Secreted" proteins are also intended to include proteins containing non-typical signal sequences (*e.g.* Interleukin-1 Beta, see Krasney, P.A. and Young, P.R. (1992) Cytokine 4(2):134 -143) and factors released from damaged cells (*e.g.* Interleukin-1 Receptor Antagonist, see Arend, W.P. et. al. (1998) Annu. Rev. Immunol. 16:27-55)

Where desired, an expression vector may be designed to contain a "signal or leader sequence" which will direct the polypeptide through the membrane of a cell. Such a sequence may be naturally present on the polypeptides of the present invention or provided from heterologous protein sources by recombinant DNA techniques.

The term "stringent" is used to refer to conditions that are commonly understood in the art as stringent. Stringent conditions can include highly stringent conditions (*i.e.*, hybridization to filter-bound DNA in 0.5 M $NaHPO_4$, 7% sodium dodecyl sulfate (SDS), 1 mM EDTA at 65°C, and washing in 0.1X SSC/0.1% SDS at 68°C), and moderately stringent conditions (*i.e.*, washing in 0.2X SSC/0.1% SDS at 42°C). Other exemplary hybridization conditions are described herein in the examples.

In instances of hybridization of deoxyoligonucleotides, additional exemplary stringent hybridization conditions include washing in 6X SSC/0.05% sodium pyrophosphate at 37°C (for 14-base oligonucleotides), 48°C (for 17-base oligos), 55°C (for 20-base oligonucleotides), and 60°C (for 23-base oligonucleotides).

As used herein, "substantially equivalent" can refer both to nucleotide and amino acid sequences, for example a mutant sequence, that varies from a reference sequence by one or more substitutions, deletions, or additions, the net effect of which does not result in an adverse functional dissimilarity between the reference and subject sequences. Typically, such a substantially equivalent sequence varies from one of those listed herein by no more than about 35% (*i.e.*, the number of individual residue substitutions, additions, and/or deletions in a substantially equivalent sequence, as compared to the corresponding reference sequence, divided by the total number of residues in the substantially equivalent sequence is about 0.35 or less). Such a sequence is said to have 65% sequence identity to the listed sequence. In one embodiment, a substantially equivalent, *e.g.*, mutant, sequence of the invention varies from a listed sequence by no more than 30% (70% sequence identity); in a variation of this embodiment, by no more than 25% (75% sequence identity); and in a further variation of this embodiment, by no more than 20% (80% sequence identity) and in a further variation of this embodiment, by no more than 10% (90% sequence identity) and in a further variation of this embodiment, by no more that 5% (95% sequence identity). Substantially equivalent, *e.g.*, mutant, amino acid sequences according to the invention preferably have at least 80% sequence identity with a listed amino acid sequence, more preferably at least 85% sequence identity, more preferably at least 90% sequence identity, more preferably at least 95% identity, more preferably at least 98% identity, and most preferably at least 99% identity. Substantially equivalent nucleotide sequences of the invention can have lower percent sequence identities, taking into account, for example, the redundancy or degeneracy of the genetic code. Preferably, nucleotide sequence has at least about 65% identity, more preferably at least about 75% identity, more preferably at least about 80% sequence identity, more preferably at least about 85% sequence identity, more preferably at least about 90% sequence identity, and most preferably at least about 95% identity, more preferably at least about 98% sequence identity, and most preferably at least about 99% sequence identity. For the purposes of the present invention, sequences having substantially equivalent biological activity and substantially equivalent expression characteristics are considered substantially equivalent. For the purposes of determining equivalence, truncation of the mature sequence (*e.g.*, via a mutation which creates a spurious stop codon) should be disregarded. Sequence identity may be determined, *e.g.*, using the Jotun Hein method (Hein, J.

(1990) Methods Enzymol. 183:626-645). Identity between sequences can also be determined by other methods known in the art, *e.g.* by varying hybridization conditions.

The term "totipotent" refers to the capability of a cell to differentiate into all of the cell types of an adult organism.

The term "transformation" means introducing DNA into a suitable host cell so that the DNA is replicable, either as an extrachromosomal element, or by chromosomal integration. The term "transfection" refers to the taking up of an expression vector by a suitable host cell, whether or not any coding sequences are in fact expressed. The term "infection" refers to the introduction of nucleic acids into a suitable host cell by use of a virus or viral vector.

As used herein, an "uptake modulating fragment," UMF, means a series of nucleotides which mediate the uptake of a linked DNA fragment into a cell. UMFs can be readily identified using known UMFs as a target sequence or target motif with the computer-based systems described below. The presence and activity of a UMF can be confirmed by attaching the suspected UMF to a marker sequence. The resulting nucleic acid molecule is then incubated with an appropriate host under appropriate conditions and the uptake of the marker sequence is determined. As described above, a UMF will increase the frequency of uptake of a linked marker sequence.

Each of the above terms is meant to encompass all that is described for each, unless the context dictates otherwise.

4.2 NUCLEIC ACIDS OF THE INVENTION

Nucleotide sequences of the invention are set forth in the Sequence Listing.

The isolated polynucleotides of the invention include a polynucleotide comprising the nucleotide sequences of SEQ ID NO:1-1009 ; a polynucleotide encoding any one of the peptide sequences of SEQ ID NO:1010-2018; and a polynucleotide comprising the nucleotide sequence encoding the mature protein coding sequence of the polypeptides of any one of SEQ ID NO:1010-2018. The polynucleotides of the present invention also include, but are not limited to, a polynucleotide that hybridizes under stringent conditions to (a) the complement of any of the nucleotides sequences of SEQ ID NO:1-1009 ; (b) nucleotide sequences encoding any one of the amino acid sequences set forth in the Sequence Listing; (c) a polynucleotide which is an allelic variant of any polynucleotide recited above; (d) a polynucleotide which encodes a species homolog of any of the proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a specific domain or truncation of the polypeptides of SEQ ID NO: 1010-2018. Domains of interest may depend on the nature of the encoded polypeptide; *e.g.*, domains in receptor-like polypeptides include ligand-binding, extracellular, transmembrane, or cytoplasmic

domains, or combinations thereof; domains in immunoglobulin-like proteins include the variable immunoglobulin-like domains; domains in enzyme-like polypeptides include catalytic and substrate binding domains; and domains in ligand polypeptides include receptor-binding domains.

The polynucleotides of the invention include naturally occurring or wholly or partially synthetic DNA, *e.g.*, cDNA and genomic DNA, and RNA, *e.g.*, mRNA. The polynucleotides may include all of the coding region of the cDNA or may represent a portion of the coding region of the cDNA.

The present invention also provides genes corresponding to the cDNA sequences disclosed herein. The corresponding genes can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include the preparation of probes or primers from the disclosed sequence information for identification and/or amplification of genes in appropriate genomic libraries or other sources of genomic materials. Further 5' and 3' sequence can be obtained using methods known in the art. For example, full length cDNA or genomic DNA that corresponds to any of the polynucleotides of SEQ ID NO:1-1009 can be obtained by screening appropriate cDNA or genomic DNA libraries under suitable hybridization conditions using any of the polynucleotides of SEQ ID NO:1-1009 or a portion thereof as a probe. Alternatively, the polynucleotides of SEQ ID NO:1-1009 may be used as the basis for suitable primer(s) that allow identification and/or amplification of genes in appropriate genomic DNA or cDNA libraries.

The nucleic acid sequences of the invention can be assembled from ESTs and sequences (including cDNA and genomic sequences) obtained from one or more public databases, such as dbEST, gbpri, and UniGene. The EST sequences can provide identifying sequence information, representative fragment or segment information, or novel segment information for the full-length gene.

The polynucleotides of the invention also provide polynucleotides including nucleotide sequences that are substantially equivalent to the polynucleotides recited above. Polynucleotides according to the invention can have, *e.g.*, at least about 65%, at least about 70%, at least about 75%, at least about 80%, 81%, 82%, 83%, 84%, more typically at least about 85%, 86%, 87%, 88%, 89%, more typically at least about 90%, 91%, 92%, 93%, 94%, and even more typically at least about 95%, 96%, 97%, 98%, 99%, sequence identity to a polynucleotide recited above.

Included within the scope of the nucleic acid sequences of the invention are nucleic acid sequence fragments that hybridize under stringent conditions to any of the nucleotide sequences of SEQ ID NO:1-1009, or complements thereof, which fragment is greater than about 5 nucleotides, preferably 7 nucleotides, more preferably greater than 9 nucleotides and most preferably greater than 17 nucleotides. Fragments of, *e.g.* 15, 17, or 20 nucleotides or more that

are selective for (*i.e.* specifically hybridize to any one of the polynucleotides of the invention) are contemplated. Probes capable of specifically hybridizing to a polynucleotide can differentiate polynucleotide sequences of the invention from other polynucleotide sequences in the same family of genes or can differentiate human genes from genes of other species, and are preferably based on unique nucleotide sequences.

The sequences falling within the scope of the present invention are not limited to these specific sequences, but also include allelic and species variations thereof. Allelic and species variations can be routinely determined by comparing the sequence provided SEQ ID NO:1-1009, a representative fragment thereof, or a nucleotide sequence at least 90% identical, preferably 95% identical, to SEQ ID NO:1-1009 with a sequence from another isolate of the same species. Furthermore, to accommodate codon variability, the invention includes nucleic acid molecules coding for the same amino acid sequences as do the specific ORFs disclosed herein. In other words, in the coding region of an ORF, substitution of one codon for another codon that encodes the same amino acid is expressly contemplated.

The nearest neighbor or homology result for the nucleic acids of the present invention, including SEQ ID NO:1-1009, can be obtained by searching a database using an algorithm or a program. Preferably, a BLAST which stands for Basic Local Alignment Search Tool is used to search for local sequence alignments (Altshul, S.F. J Mol. Evol. 36 290-300 (1993) and Altschul S.F. et al. J. Mol. Biol. 21:403-410 (1990)). Alternatively a FASTA version 3 search against Genpept, using Fastxy algorithm.

Species homologs (or orthologs) of the disclosed polynucleotides and proteins are also provided by the present invention. Species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source from the desired species.

The invention also encompasses allelic variants of the disclosed polynucleotides or proteins; that is, naturally-occurring alternative forms of the isolated polynucleotide which also encode proteins which are identical, homologous or related to that encoded by the polynucleotides.

The nucleic acid sequences of the invention are further directed to sequences which encode variants of the described nucleic acids. These amino acid sequence variants may be prepared by methods known in the art by introducing appropriate nucleotide changes into a native or variant polynucleotide. There are two variables in the construction of amino acid sequence variants: the location of the mutation and the nature of the mutation. Nucleic acids encoding the amino acid sequence variants are preferably constructed by mutating the polynucleotide to encode an amino acid sequence that does not occur in nature. These nucleic

acid alterations can be made at sites that differ in the nucleic acids from different species (variable positions) or in highly conserved regions (constant regions). Sites at such locations will typically be modified in series, *e.g.*, by substituting first with conservative choices (*e.g.*, hydrophobic amino acid to a different hydrophobic amino acid) and then with more distant choices (*e.g.*, hydrophobic amino acid to a charged amino acid), and then deletions or insertions may be made at the target site. Amino acid sequence deletions generally range from about 1 to 30 residues, preferably about 1 to 10 residues, and are typically contiguous. Amino acid insertions include amino- and/or carboxyl-terminal fusions ranging in length from one to one hundred or more residues, as well as intrasequence insertions of single or multiple amino acid residues. Intrasequence insertions may range generally from about 1 to 10 amino residues, preferably from 1 to 5 residues. Examples of terminal insertions include the heterologous signal sequences necessary for secretion or for intracellular targeting in different host cells and sequences such as FLAG or poly-histidine sequences useful for purifying the expressed protein.

In a preferred method, polynucleotides encoding the novel amino acid sequences are changed via site-directed mutagenesis. This method uses oligonucleotide sequences to alter a polynucleotide to encode the desired amino acid variant, as well as sufficient adjacent nucleotides on both sides of the changed amino acid to form a stable duplex on either side of the site of being changed. In general, the techniques of site-directed mutagenesis are well known to those of skill in the art and this technique is exemplified by publications such as, Edelman et al., *DNA* 2:183 (1983). A versatile and efficient method for producing site-specific changes in a polynucleotide sequence was published by Zoller and Smith, *Nucleic Acids Res.* 10:6487-6500 (1982). PCR may also be used to create amino acid sequence variants of the novel nucleic acids. When small amounts of template DNA are used as starting material, primer(s) that differs slightly in sequence from the corresponding region in the template DNA can generate the desired amino acid variant. PCR amplification results in a population of product DNA fragments that differ from the polynucleotide template encoding the polypeptide at the position specified by the primer. The product DNA fragments replace the corresponding region in the plasmid and this gives a polynucleotide encoding the desired amino acid variant.

A further technique for generating amino acid variants is the cassette mutagenesis technique described in Wells et al., *Gene* 34:315 (1985); and other mutagenesis techniques well known in the art, such as, for example, the techniques in Sambrook et al., supra, and *Current Protocols in Molecular Biology*, Ausubel et al. Due to the inherent degeneracy of the genetic code, other DNA sequences which encode substantially the same or a functionally equivalent amino acid sequence may be used in the practice of the invention for the cloning and expression

of these novel nucleic acids. Such DNA sequences include those which are capable of hybridizing to the appropriate novel nucleic acid sequence under stringent conditions.

Polynucleotides encoding preferred polypeptide truncations of the invention can be used to generate polynucleotides encoding chimeric or fusion proteins comprising one or more domains of the invention and heterologous protein sequences.

The polynucleotides of the invention additionally include the complement of any of the polynucleotides recited above. The polynucleotide can be DNA (genomic, cDNA, amplified, or synthetic) or RNA. Methods and algorithms for obtaining such polynucleotides are well known to those of skill in the art and can include, for example, methods for determining hybridization conditions that can routinely isolate polynucleotides of the desired sequence identities.

In accordance with the invention, polynucleotide sequences comprising the mature protein coding sequences corresponding to any one of SEQ ID NO:1-1009, or functional equivalents thereof, may be used to generate recombinant DNA molecules that direct the expression of that nucleic acid, or a functional equivalent thereof, in appropriate host cells. Also included are the cDNA inserts of any of the clones identified herein.

A polynucleotide according to the invention can be joined to any of a variety of other nucleotide sequences by well-established recombinant DNA techniques (see Sambrook J et al. (1989) Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, NY). Useful nucleotide sequences for joining to polynucleotides include an assortment of vectors, *e.g.*, plasmids, cosmids, lambda phage derivatives, phagemids, and the like, that are well known in the art. Accordingly, the invention also provides a vector including a polynucleotide of the invention and a host cell containing the polynucleotide. In general, the vector contains an origin of replication functional in at least one organism, convenient restriction endonuclease sites, and a selectable marker for the host cell. Vectors according to the invention include expression vectors, replication vectors, probe generation vectors, and sequencing vectors. A host cell according to the invention can be a prokaryotic or eukaryotic cell and can be a unicellular organism or part of a multicellular organism.

The present invention further provides recombinant constructs comprising a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-1009 or a fragment thereof or any other polynucleotides of the invention. In one embodiment, the recombinant constructs of the present invention comprise a vector, such as a plasmid or viral vector, into which a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-1009 or a fragment thereof is inserted, in a forward or reverse orientation. In the case of a vector comprising one of the ORFs of the present invention, the vector may further comprise regulatory sequences, including for example, a promoter, operably linked to the ORF. Large numbers of suitable vectors and promoters are

known to those of skill in the art and are commercially available for generating the recombinant constructs of the present invention. The following vectors are provided by way of example. Bacterial: pBs, phagescript, PsiX174, pBluescript SK, pBs KS, pNH8a, pNH16a, pNH18a, pNH46a (Stratagene); pTrc99A, pKK223-3, pKK233-3, pDR540, pRIT5 (Pharmacia). Eukaryotic: pWLneo, pSV2cat, pOG44, PXTI, pSG (Stratagene) pSVK3, pBPV, pMSG, pSVL (Pharmacia).

The isolated polynucleotide of the invention may be operably linked to an expression control sequence such as the pMT2 or pED expression vectors disclosed in Kaufman et al., *Nucleic Acids Res.* 19, 4485-4490 (1991), in order to produce the protein recombinantly. Many suitable expression control sequences are known in the art. General methods of expressing recombinant proteins are also known and are exemplified in R. Kaufman, *Methods in Enzymology* 185, 537-566 (1990). As defined herein "operably linked" means that the isolated polynucleotide of the invention and an expression control sequence are situated within a vector or cell in such a way that the protein is expressed by a host cell which has been transformed (transfected) with the ligated polynucleotide/expression control sequence.

Promoter regions can be selected from any desired gene using CAT (chloramphenicol transferase) vectors or other vectors with selectable markers. Two appropriate vectors are pKK232-8 and pCM7. Particular named bacterial promoters include lacI, lacZ, T3, T7, gpt, lambda PR, and trc. Eukaryotic promoters include CMV immediate early, HSV thymidine kinase, early and late SV40, LTRs from retrovirus, and mouse metallothionein-I. Selection of the appropriate vector and promoter is well within the level of ordinary skill in the art. Generally, recombinant expression vectors will include origins of replication and selectable markers permitting transformation of the host cell, *e.g.*, the ampicillin resistance gene of *E. coli* and *S. cerevisiae* TRP1 gene, and a promoter derived from a highly-expressed gene to direct transcription of a downstream structural sequence. Such promoters can be derived from operons encoding glycolytic enzymes such as 3-phosphoglycerate kinase (PGK), a-factor, acid phosphatase, or heat shock proteins, among others. The heterologous structural sequence is assembled in appropriate phase with translation initiation and termination sequences, and preferably, a leader sequence capable of directing secretion of translated protein into the periplasmic space or extracellular medium. Optionally, the heterologous sequence can encode a fusion protein including an amino terminal identification peptide imparting desired characteristics, *e.g.*, stabilization or simplified purification of expressed recombinant product. Useful expression vectors for bacterial use are constructed by inserting a structural DNA sequence encoding a desired protein together with suitable translation initiation and termination signals in operable reading phase with a functional promoter. The vector will comprise one or

more phenotypic selectable markers and an origin of replication to ensure maintenance of the vector and to, if desirable, provide amplification within the host. Suitable prokaryotic hosts for transformation include *E. coli*, *Bacillus subtilis*, *Salmonella typhimurium* and various species within the genera *Pseudomonas*, *Streptomyces*, and *Staphylococcus*, although others may also be employed as a matter of choice.

As a representative but non-limiting example, useful expression vectors for bacterial use can comprise a selectable marker and bacterial origin of replication derived from commercially available plasmids comprising genetic elements of the well known cloning vector pBR322 (ATCC 37017). Such commercial vectors include, for example, pKK223-3 (Pharmacia Fine Chemicals, Uppsala, Sweden) and GEM 1 (Promega Biotech, Madison, WI, USA). These pBR322 "backbone" sections are combined with an appropriate promoter and the structural sequence to be expressed. Following transformation of a suitable host strain and growth of the host strain to an appropriate cell density, the selected promoter is induced or derepressed by appropriate means (*e.g.*, temperature shift or chemical induction) and cells are cultured for an additional period. Cells are typically harvested by centrifugation, disrupted by physical or chemical means, and the resulting crude extract retained for further purification.

Polynucleotides of the invention can also be used to induce immune responses. For example, as described in Fan et al., *Nat. Biotech.* 17:870-872 (1999), incorporated herein by reference, nucleic acid sequences encoding a polypeptide may be used to generate antibodies against the encoded polypeptide following topical administration of naked plasmid DNA or following injection, and preferably intramuscular injection of the DNA. The nucleic acid sequences are preferably inserted in a recombinant expression vector and may be in the form of naked DNA.

4.3 ANTISENSE

Another aspect of the invention pertains to isolated antisense nucleic acid molecules that are hybridizable to or complementary to the nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1-1009, or fragments, analogs or derivatives thereof. An "antisense" nucleic acid comprises a nucleotide sequence that is complementary to a "sense" nucleic acid encoding a protein, *e.g.*, complementary to the coding strand of a double-stranded cDNA molecule or complementary to an mRNA sequence. In specific aspects, antisense nucleic acid molecules are provided that comprise a sequence complementary to at least about 10, 25, 50, 100, 250 or 500 nucleotides or an entire coding strand, or to only a portion thereof. Nucleic acid molecules encoding fragments, homologs, derivatives and analogs of a protein of any of SEQ ID

NO:1010-2018 or antisense nucleic acids complementary to a nucleic acid sequence of SEQ ID NO:1-1009 are additionally provided.

In one embodiment, an antisense nucleic acid molecule is antisense to a "coding region" of the coding strand of a nucleotide sequence of the invention. The term "coding region" refers to the region of the nucleotide sequence comprising codons which are translated into amino acid residues. In another embodiment, the antisense nucleic acid molecule is antisense to a "noncoding region" of the coding strand of a nucleotide sequence of the invention. The term "noncoding region" refers to 5' and 3' sequences which flank the coding region that are not translated into amino acids (*i.e.*, also referred to as 5' and 3' untranslated regions).

Given the coding strand sequences encoding a nucleic acid disclosed herein (*e.g.*, SEQ ID NO:1-1009), antisense nucleic acids of the invention can be designed according to the rules of Watson and Crick or Hoogsteen base pairing. The antisense nucleic acid molecule can be complementary to the entire coding region of a mRNA, but more preferably is an oligonucleotide that is antisense to only a portion of the coding or noncoding region of a mRNA. For example, the antisense oligonucleotide can be complementary to the region surrounding the translation start site of a mRNA. An antisense oligonucleotide can be, for example, about 5, 10, 15, 20, 25, 30, 35, 40, 45 or 50 nucleotides in length. An antisense nucleic acid of the invention can be constructed using chemical synthesis or enzymatic ligation reactions using procedures known in the art. For example, an antisense nucleic acid (*e.g.*, an antisense oligonucleotide) can be chemically synthesized using naturally occurring nucleotides or variously modified nucleotides designed to increase the biological stability of the molecules or to increase the physical stability of the duplex formed between the antisense and sense nucleic acids, *e.g.*, phosphorothioate derivatives and acridine substituted nucleotides can be used.

Examples of modified nucleotides that can be used to generate the antisense nucleic acid include: 5-fluorouracil, 5-bromouracil, 5-chlorouracil, 5-iodouracil, hypoxanthine, xanthine, 4-acetylcytosine, 5-(carboxyhydroxylmethyl) uracil, 5-carboxymethylaminomethyl-2-thiouridine, 5-carboxymethylaminomethyluracil, dihydrouracil, beta-D-galactosylqueosine, inosine, N6-isopentenyladenine, 1-methylguanine, 1-methylinosine, 2,2-dimethylguanine, 2-methyladenine, 2-methylguanine, 3-methylcytosine, 5-methylcytosine, N6-adenine, 7-methylguanine, 5-methylaminomethyluracil, 5-methoxyaminomethyl-2-thiouracil, beta-D-mannosylqueosine, 5'-methoxycarboxymethyluracil, 5-methoxyuracil, 2-methylthio-N6-isopentenyladenine, uracil-5-oxyacetic acid (v), wybutoxosine, pseudouracil, queosine, 2-thiocytosine, 5-methyl-2-thiouracil, 2-thiouracil, 4-thiouracil, 5-methyluracil, uracil-5-oxyacetic acid methylester, uracil-5-oxyacetic acid (v), 5-methyl-2-thiouracil, 3-(3-amino-3-N-2-carboxypropyl) uracil, (acp3)w, and 2,6-diaminopurine. Alternatively, the

antisense nucleic acid can be produced biologically using an expression vector into which a nucleic acid has been subcloned in an antisense orientation (*i.e.*, RNA transcribed from the inserted nucleic acid will be of an antisense orientation to a target nucleic acid of interest, described further in the following subsection).

The antisense nucleic acid molecules of the invention are typically administered to a subject or generated *in situ* such that they hybridize with or bind to cellular mRNA and/or genomic DNA encoding a protein according to the invention to thereby inhibit expression of the protein, *e.g.*, by inhibiting transcription and/or translation. The hybridization can be by conventional nucleotide complementarity to form a stable duplex, or, for example, in the case of an antisense nucleic acid molecule that binds to DNA duplexes, through specific interactions in the major groove of the double helix. An example of a route of administration of antisense nucleic acid molecules of the invention includes direct injection at a tissue site. Alternatively, antisense nucleic acid molecules can be modified to target selected cells and then administered systemically. For example, for systemic administration, antisense molecules can be modified such that they specifically bind to receptors or antigens expressed on a selected cell surface, *e.g.*, by linking the antisense nucleic acid molecules to peptides or antibodies that bind to cell surface receptors or antigens. The antisense nucleic acid molecules can also be delivered to cells using the vectors described herein. To achieve sufficient intracellular concentrations of antisense molecules, vector constructs in which the antisense nucleic acid molecule is placed under the control of a strong pol II or pol III promoter are preferred.

In yet another embodiment, the antisense nucleic acid molecule of the invention is an α-anomeric nucleic acid molecule. An α-anomeric nucleic acid molecule forms specific double-stranded hybrids with complementary RNA in which, contrary to the usual β-units, the strands run parallel to each other (Gaultier *et al.* (1987) *Nucleic Acids Res* 15: 6625-6641). The antisense nucleic acid molecule can also comprise a 2'-o-methylribonucleotide (Inoue *et al.* (1987) *Nucleic Acids Res* 15: 6131-6148) or a chimeric RNA -DNA analogue (Inoue *et al.* (1987) *FEBS Lett* 215: 327-330).

4.4 RIBOZYMES AND PNA MOIETIES

In still another embodiment, an antisense nucleic acid of the invention is a ribozyme. Ribozymes are catalytic RNA molecules with ribonuclease activity that are capable of cleaving a single-stranded nucleic acid, such as a mRNA, to which they have a complementary region. Thus, ribozymes (*e.g.*, hammerhead ribozymes (described in Haselhoff and Gerlach (1988) *Nature* 334:585-591)) can be used to catalytically cleave a mRNA transcripts to thereby inhibit translation of a mRNA. A ribozyme having specificity for a nucleic acid of the invention can be

designed based upon the nucleotide sequence of a DNA disclosed herein (*i.e.*, SEQ ID NO:1-1009). For example, a derivative of a Tetrahymena L-19 IVS RNA can be constructed in which the nucleotide sequence of the active site is complementary to the nucleotide sequence to be cleaved in a SECX-encoding mRNA. See, *e.g.*, Cech *et al.* U.S. Pat. No. 4,987,071; and Cech *et al.* U.S. Pat. No. 5,116,742. Alternatively, SECX mRNA can be used to select a catalytic RNA having a specific ribonuclease activity from a pool of RNA molecules. See, *e.g.*, Bartel *et al.*, (1993) *Science* 261:1411-1418.

Alternatively, gene expression can be inhibited by targeting nucleotide sequences complementary to the regulatory region (*e.g.*, promoter and/or enhancers) to form triple helical structures that prevent transcription of the gene in target cells. See generally, Helene. (1991) *Anticancer Drug Des.* 6: 569-84; Helene. *et al.* (1992) *Ann. N.Y. Acad. Sci.* 660:27-36; and Maher (1992) *Bioassays* 14: 807-15.

In various embodiments, the nucleic acids of the invention can be modified at the base moiety, sugar moiety or phosphate backbone to improve, *e.g.*, the stability, hybridization, or solubility of the molecule. For example, the deoxyribose phosphate backbone of the nucleic acids can be modified to generate peptide nucleic acids (see Hyrup *et al.* (1996) *Bioorg Med Chem* 4: 5-23). As used herein, the terms "peptide nucleic acids" or "PNAs" refer to nucleic acid mimics, *e.g.*, DNA mimics, in which the deoxyribose phosphate backbone is replaced by a pseudopeptide backbone and only the four natural nucleobases are retained. The neutral backbone of PNAs has been shown to allow for specific hybridization to DNA and RNA under conditions of low ionic strength. The synthesis of PNA oligomers can be performed using standard solid phase peptide synthesis protocols as described in Hyrup *et al.* (1996) above; Perry-O'Keefe *et al.* (1996) *PNAS* 93: 14670-675.

PNAs of the invention can be used in therapeutic and diagnostic applications. For example, PNAs can be used as antisense or antigene agents for sequence-specific modulation of gene expression by, *e.g.*, inducing transcription or translation arrest or inhibiting replication. PNAs of the invention can also be used, *e.g.*, in the analysis of single base pair mutations in a gene by, *e.g.*, PNA directed PCR clamping; as artificial restriction enzymes when used in combination with other enzymes, *e.g.*, S1 nucleases (Hyrup B. (1996) above); or as probes or primers for DNA sequence and hybridization (Hyrup *et al.* (1996), above; Perry-O'Keefe (1996), above).

In another embodiment, PNAs of the invention can be modified, *e.g.*, to enhance their stability or cellular uptake, by attaching lipophilic or other helper groups to PNA, by the formation of PNA-DNA chimeras, or by the use of liposomes or other techniques of drug delivery known in the art. For example, PNA-DNA chimeras can be generated that may

combine the advantageous properties of PNA and DNA. Such chimeras allow DNA recognition enzymes, *e.g.*, RNase H and DNA polymerases, to interact with the DNA portion while the PNA portion would provide high binding affinity and specificity. PNA-DNA chimeras can be linked using linkers of appropriate lengths selected in terms of base stacking, number of bonds between the nucleobases, and orientation (Hyrup (1996) above). The synthesis of PNA-DNA chimeras can be performed as described in Hyrup (1996) above and Finn *et al.* (1996) *Nucl Acids Res* 24: 3357-63. For example, a DNA chain can be synthesized on a solid support using standard phosphoramidite coupling chemistry, and modified nucleoside analogs, *e.g.*, 5'-(4-methoxytrityl)amino-5'-deoxy-thymidine phosphoramidite, can be used between the PNA and the 5' end of DNA (Mag *et al.* (1989) *Nucl Acid Res* 17: 5973-88). PNA monomers are then coupled in a stepwise manner to produce a chimeric molecule with a 5' PNA segment and a 3' DNA segment (Finn *et al.* (1996) above). Alternatively, chimeric molecules can be synthesized with a 5' DNA segment and a 3' PNA segment. See, Petersen *et al.* (1975) *Bioorg Med Chem Lett* 5: 1119-11124.

In other embodiments, the oligonucleotide may include other appended groups such as peptides (*e.g.*, for targeting host cell receptors *in vivo*), or agents facilitating transport across the cell membrane (see, *e.g.*, Letsinger *et al.*, 1989, *Proc. Natl. Acad. Sci. U.S.A.* 86:6553-6556; Lemaitre *et al.*, 1987, Proc. *Natl. Acad. Sci.* 84:648-652; PCT Publication No. W088/09810) or the blood-brain barrier (see, *e.g.*, PCT Publication No. W089/10134). In addition, oligonucleotides can be modified with hybridization triggered cleavage agents (See, *e.g.*, Krol *et al.*, 1988, *BioTechniques* 6:958-976) or intercalating agents. (See, *e.g.*, Zon, 1988, *Pharm. Res.* 5: 539-549). To this end, the oligonucleotide may be conjugated to another molecule, *e.g.*, a peptide, a hybridization triggered cross-linking agent, a transport agent, a hybridization-triggered cleavage agent, etc.

4.5 HOSTS

The present invention further provides host cells genetically engineered to contain the polynucleotides of the invention. For example, such host cells may contain nucleic acids of the invention introduced into the host cell using known transformation, transfection or infection methods. The present invention still further provides host cells genetically engineered to express the polynucleotides of the invention, wherein such polynucleotides are in operative association with a regulatory sequence heterologous to the host cell which drives expression of the polynucleotides in the cell.

Knowledge of nucleic acid sequences allows for modification of cells to permit, or increase, expression of endogenous polypeptide. Cells can be modified (*e.g.*, by homologous

recombination) to provide increased polypeptide expression by replacing, in whole or in part, the naturally occurring promoter with all or part of a heterologous promoter so that the cells express the polypeptide at higher levels. The heterologous promoter is inserted in such a manner that it is operatively linked to the encoding sequences. See, for example, PCT International Publication No. WO94/12650, PCT International Publication No. WO92/20808, and PCT International Publication No. WO91/09955. It is also contemplated that, in addition to heterologous promoter DNA, amplifiable marker DNA (*e.g.*, ada, dhfr, and the multifunctional CAD gene which encodes carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron DNA may be inserted along with the heterologous promoter DNA. If linked to the coding sequence, amplification of the marker DNA by standard selection methods results in co-amplification of the desired protein coding sequences in the cells.

The host cell can be a higher eukaryotic host cell, such as a mammalian cell, a lower eukaryotic host cell, such as a yeast cell, or the host cell can be a prokaryotic cell, such as a bacterial cell. Introduction of the recombinant construct into the host cell can be effected by calcium phosphate transfection, DEAE, dextran mediated transfection, or electroporation (Davis, L. et al., *Basic Methods in Molecular Biology* (1986)). The host cells containing one of the polynucleotides of the invention, can be used in conventional manners to produce the gene product encoded by the isolated fragment (in the case of an ORF) or can be used to produce a heterologous protein under the control of the EMF.

Any host/vector system can be used to express one or more of the ORFs of the present invention. These include, but are not limited to, eukaryotic hosts such as HeLa cells, Cv-1 cell, COS cells, 293 cells, and Sf9 cells, as well as prokaryotic host such as *E. coli* and *B. subtilis*. The most preferred cells are those which do not normally express the particular polypeptide or protein or which expresses the polypeptide or protein at low natural level. Mature proteins can be expressed in mammalian cells, yeast, bacteria, or other cells under the control of appropriate promoters. Cell-free translation systems can also be employed to produce such proteins using RNAs derived from the DNA constructs of the present invention. Appropriate cloning and expression vectors for use with prokaryotic and eukaryotic hosts are described by Sambrook, et al., in Molecular Cloning: A Laboratory Manual, Second Edition, Cold Spring Harbor, New York (1989), the disclosure of which is hereby incorporated by reference.

Various mammalian cell culture systems can also be employed to express recombinant protein. Examples of mammalian expression systems include the COS-7 lines of monkey kidney fibroblasts, described by Gluzman, Cell 23:175 (1981). Other cell lines capable of expressing a compatible vector are, for example, the C127, monkey COS cells, Chinese Hamster Ovary (CHO) cells, human kidney 293 cells, human epidermal A431 cells, human Colo205 cells, 3T3

cells, CV-1 cells, other transformed primate cell lines, normal diploid cells, cell strains derived from *in vitro* culture of primary tissue, primary explants, HeLa cells, mouse L cells, BHK, HL-60, U937, HaK or Jurkat cells. Mammalian expression vectors will comprise an origin of replication, a suitable promoter and also any necessary ribosome binding sites, polyadenylation site, splice donor and acceptor sites, transcriptional termination sequences, and 5′ flanking nontranscribed sequences. DNA sequences derived from the SV40 viral genome, for example, SV40 origin, early promoter, enhancer, splice, and polyadenylation sites may be used to provide the required nontranscribed genetic elements. Recombinant polypeptides and proteins produced in bacterial culture are usually isolated by initial extraction from cell pellets, followed by one or more salting-out, aqueous ion exchange or size exclusion chromatography steps. Protein refolding steps can be used, as necessary, in completing configuration of the mature protein. Finally, high performance liquid chromatography (HPLC) can be employed for final purification steps. Microbial cells employed in expression of proteins can be disrupted by any convenient method, including freeze-thaw cycling, sonication, mechanical disruption, or use of cell lysing agents.

Alternatively, it may be possible to produce the protein in lower eukaryotes such as yeast or insects or in prokaryotes such as bacteria. Potentially suitable yeast strains include *Saccharomyces cerevisiae*, *Schizosaccharomyces pombe*, *Kluyveromyces* strains, *Candida*, or any yeast strain capable of expressing heterologous proteins. Potentially suitable bacterial strains include *Escherichia coli, Bacillus subtilis, Salmonella typhimurium*, or any bacterial strain capable of expressing heterologous proteins. If the protein is made in yeast or bacteria, it may be necessary to modify the protein produced therein, for example by phosphorylation or glycosylation of the appropriate sites, in order to obtain the functional protein. Such covalent attachments may be accomplished using known chemical or enzymatic methods.

In another embodiment of the present invention, cells and tissues may be engineered to express an endogenous gene comprising the polynucleotides of the invention under the control of inducible regulatory elements, in which case the regulatory sequences of the endogenous gene may be replaced by homologous recombination. As described herein, gene targeting can be used to replace a gene's existing regulatory region with a regulatory sequence isolated from a different gene or a novel regulatory sequence synthesized by genetic engineering methods. Such regulatory sequences may be comprised of promoters, enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional initiation sites, regulatory protein binding sites or combinations of said sequences. Alternatively, sequences which affect the structure or stability of the RNA or protein produced may be replaced, removed, added, or otherwise modified by targeting. These sequence include polyadenylation signals, mRNA stability elements, splice

sites, leader sequences for enhancing or modifying transport or secretion properties of the protein, or other sequences which alter or improve the function or stability of protein or RNA molecules.

The targeting event may be a simple insertion of the regulatory sequence, placing the gene under the control of the new regulatory sequence, *e.g.*, inserting a new promoter or enhancer or both upstream of a gene. Alternatively, the targeting event may be a simple deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory element. Alternatively, the targeting event may replace an existing element; for example, a tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are added. In all cases, the identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are contiguous with the targeting DNA, allowing for the selection of cells in which the exogenous DNA has integrated into the host cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

4.6 POLYPEPTIDES OF THE INVENTION

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising: the amino acid sequences set forth as any one of SEQ ID NO:1010-2018 or an amino acid sequence encoded by any one of the nucleotide sequences SEQ ID NO:1-1009 or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides preferably with biological or immunological activity that are encoded by: (a) a polynucleotide having any one of the nucleotide sequences set forth in SEQ ID NO:1-1009 or (b)

polynucleotides encoding any one of the amino acid sequences set forth as SEQ ID NO:1010-2018 or (c) polynucleotides that hybridize to the complement of the polynucleotides of either (a) or (b) under stringent hybridization conditions. The invention also provides biologically active or immunologically active variants of any of the amino acid sequences set forth as SEQ ID NO:1010-2018 or the corresponding full length or mature protein; and "substantial equivalents" thereof (*e.g.*, with at least about 65%, at least about 70%, at least about 75%, at least about 80%, at least about 85%, 86%, 87%, 88%, 89%, at least about 90%, 91%, 92%, 93%, 94%, typically at least about 95%, 96%, 97%, more typically at least about 98%, or most typically at least about 99% amino acid identity) that retain biological activity. Polypeptides encoded by allelic variants may have a similar, increased, or decreased activity compared to polypeptides comprising SEQ ID NO:1010-2018.

Fragments of the proteins of the present invention which are capable of exhibiting biological activity are also encompassed by the present invention. Fragments of the protein may be in linear form or they may be cyclized using known methods, for example, as described in H. U. Saragovi, et al., Bio/Technology 10, 773-778 (1992) and in R. S. McDowell, et al., J. Amer. Chem. Soc. 114, 9245-9253 (1992), both of which are incorporated herein by reference. Such fragments may be fused to carrier molecules such as immunoglobulins for many purposes, including increasing the valency of protein binding sites.

The present invention also provides both full-length and mature forms (for example, without a signal sequence or precursor sequence) of the disclosed proteins. The protein coding sequence is identified in the sequence listing by translation of the disclosed nucleotide sequences. The mature form of such protein may be obtained by expression of a full-length polynucleotide in a suitable mammalian cell or other host cell. The sequence of the mature form of the protein is also determinable from the amino acid sequence of the full-length form. Where proteins of the present invention are membrane bound, soluble forms of the proteins are also provided. In such forms, part or all of the regions causing the proteins to be membrane bound are deleted so that the proteins are fully secreted from the cell in which they are expressed.

Protein compositions of the present invention may further comprise an acceptable carrier, such as a hydrophilic, *e.g.*, pharmaceutically acceptable, carrier.

The present invention further provides isolated polypeptides encoded by the nucleic acid fragments of the present invention or by degenerate variants of the nucleic acid fragments of the present invention. By "degenerate variant" is intended nucleotide fragments which differ from a nucleic acid fragment of the present invention (*e.g.*, an ORF) by nucleotide sequence but, due to the degeneracy of the genetic code, encode an identical polypeptide sequence. Preferred nucleic acid fragments of the present invention are the ORFs that encode proteins.

A variety of methodologies known in the art can be utilized to obtain any one of the isolated polypeptides or proteins of the present invention. At the simplest level, the amino acid sequence can be synthesized using commercially available peptide synthesizers. The synthetically-constructed protein sequences, by virtue of sharing primary, secondary or tertiary structural and/or conformational characteristics with proteins may possess biological properties in common therewith, including protein activity. This technique is particularly useful in producing small peptides and fragments of larger polypeptides. Fragments are useful, for example, in generating antibodies against the native polypeptide. Thus, they may be employed as biologically active or immunological substitutes for natural, purified proteins in screening of therapeutic compounds and in immunological processes for the development of antibodies.

The polypeptides and proteins of the present invention can alternatively be purified from cells which have been altered to express the desired polypeptide or protein. As used herein, a cell is said to be altered to express a desired polypeptide or protein when the cell, through genetic manipulation, is made to produce a polypeptide or protein which it normally does not produce or which the cell normally produces at a lower level. One skilled in the art can readily adapt procedures for introducing and expressing either recombinant or synthetic sequences into eukaryotic or prokaryotic cells in order to generate a cell which produces one of the polypeptides or proteins of the present invention.

The invention also relates to methods for producing a polypeptide comprising growing a culture of host cells of the invention in a suitable culture medium, and purifying the protein from the cells or the culture in which the cells are grown. For example, the methods of the invention include a process for producing a polypeptide in which a host cell containing a suitable expression vector that includes a polynucleotide of the invention is cultured under conditions that allow expression of the encoded polypeptide. The polypeptide can be recovered from the culture, conveniently from the culture medium, or from a lysate prepared from the host cells and further purified. Preferred embodiments include those in which the protein produced by such process is a full length or mature form of the protein.

In an alternative method, the polypeptide or protein is purified from bacterial cells which naturally produce the polypeptide or protein. One skilled in the art can readily follow known methods for isolating polypeptides and proteins in order to obtain one of the isolated polypeptides or proteins of the present invention. These include, but are not limited to, immunochromatography, HPLC, size-exclusion chromatography, ion-exchange chromatography, and immuno-affinity chromatography. See, *e.g.*, Scopes, *Protein Purification: Principles and Practice*, Springer-Verlag (1994); Sambrook, et al., in Molecular Cloning: *A Laboratory Manual*; Ausubel et al., *Current Protocols in Molecular Biology.* Polypeptide fragments that

retain biological/immunological activity include fragments comprising greater than about 100 amino acids, or greater than about 200 amino acids, and fragments that encode specific protein domains.

The purified polypeptides can be used in *in vitro* binding assays which are well known in the art to identify molecules which bind to the polypeptides. These molecules include but are not limited to, for *e.g.*, small molecules, molecules from combinatorial libraries, antibodies or other proteins. The molecules identified in the binding assay are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

In addition, the peptides of the invention or molecules capable of binding to the peptides may be complexed with toxins, *e.g.*, ricin or cholera, or with other compounds that are toxic to cells. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity of the binding molecule for SEQ ID NO:1010-2018.

The protein of the invention may also be expressed as a product of transgenic animals, *e.g.*, as a component of the milk of transgenic cows, goats, pigs, or sheep which are characterized by somatic or germ cells containing a nucleotide sequence encoding the protein.

The proteins provided herein also include proteins characterized by amino acid sequences similar to those of purified proteins but into which modification are naturally provided or deliberately engineered. For example, modifications, in the peptide or DNA sequence, can be made by those skilled in the art using known techniques. Modifications of interest in the protein sequences may include the alteration, substitution, replacement, insertion or deletion of a selected amino acid residue in the coding sequence. For example, one or more of the cysteine residues may be deleted or replaced with another amino acid to alter the conformation of the molecule. Techniques for such alteration, substitution, replacement, insertion or deletion are well known to those skilled in the art (see, *e.g.*, U.S. Pat. No. 4,518,584). Preferably, such alteration, substitution, replacement, insertion or deletion retains the desired activity of the protein. Regions of the protein that are important for the protein function can be determined by various methods known in the art including the alanine-scanning method which involved systematic substitution of single or strings of amino acids with alanine, followed by testing the resulting alanine-containing variant for biological activity. This type of analysis determines the importance of the substituted amino acid(s) in biological activity. Regions of the protein that are important for protein function may be determined by the eMATRIX program.

Other fragments and derivatives of the sequences of proteins which would be expected to retain protein activity in whole or in part and are useful for screening or other immunological

methodologies may also be easily made by those skilled in the art given the disclosures herein. Such modifications are encompassed by the present invention.

The protein may also be produced by operably linking the isolated polynucleotide of the invention to suitable control sequences in one or more insect expression vectors, and employing an insect expression system. Materials and methods for baculovirus/insect cell expression systems are commercially available in kit form from, *e.g.*, Invitrogen, San Diego, Calif., U.S.A. (the MaxBat™ kit), and such methods are well known in the art, as described in Summers and Smith, Texas Agricultural Experiment Station Bulletin No. 1555 (1987), incorporated herein by reference. As used herein, an insect cell capable of expressing a polynucleotide of the present invention is "transformed."

The protein of the invention may be prepared by culturing transformed host cells under culture conditions suitable to express the recombinant protein. The resulting expressed protein may then be purified from such culture (*i.e.*, from culture medium or cell extracts) using known purification processes, such as gel filtration and ion exchange chromatography. The purification of the protein may also include an affinity column containing agents which will bind to the protein; one or more column steps over such affinity resins as concanavalin A-agarose, heparin-toyopearl™ or Cibacrom blue 3GA Sepharose™; one or more steps involving hydrophobic interaction chromatography using such resins as phenyl ether, butyl ether, or propyl ether; or immunoaffinity chromatography.

Alternatively, the protein of the invention may also be expressed in a form which will facilitate purification. For example, it may be expressed as a fusion protein, such as those of maltose binding protein (MBP), glutathione-S-transferase (GST) or thioredoxin (TRX), or as a His tag. Kits for expression and purification of such fusion proteins are commercially available from New England BioLab (Beverly, Mass.), Pharmacia (Piscataway, N.J.) and Invitrogen, respectively. The protein can also be tagged with an epitope and subsequently purified by using a specific antibody directed to such epitope. One such epitope ("FLAG®") is commercially available from Kodak (New Haven, Conn.).

Finally, one or more reverse-phase high performance liquid chromatography (RP- HPLC) steps employing hydrophobic RP-HPLC media, *e.g.*, silica gel having pendant methyl or other aliphatic groups, can be employed to further purify the protein. Some or all of the foregoing purification steps, in various combinations, can also be employed to provide a substantially homogeneous isolated recombinant protein. The protein thus purified is substantially free of other mammalian proteins and is defined in accordance with the present invention as an "isolated protein."

The polypeptides of the invention include analogs (variants). This embraces fragments, as well as peptides in which one or more amino acids has been deleted, inserted, or substituted. Also, analogs of the polypeptides of the invention embrace fusions of the polypeptides or modifications of the polypeptides of the invention, wherein the polypeptide or analog is fused to another moiety or moieties, *e.g.*, targeting moiety or another therapeutic agent. Such analogs may exhibit improved properties such as activity and/or stability. Examples of moieties which may be fused to the polypeptide or an analog include, for example, targeting moieties which provide for the delivery of polypeptide to pancreatic cells, *e.g.*, antibodies to pancreatic cells, antibodies to immune cells such as T-cells, monocytes, dendritic cells, granulocytes, etc., as well as receptor and ligands expressed on pancreatic or immune cells. Other moieties which may be fused to the polypeptide include therapeutic agents which are used for treatment, for example, immunosuppressive drugs such as cyclosporin, SK506, azathioprine, CD3 antibodies and steroids. Also, polypeptides may be fused to immune modulators, and other cytokines such as alpha or beta interferon.

4.6.1 DETERMINING POLYPEPTIDE AND POLYNUCLEOTIDE IDENTITY AND SIMILARITY

Preferred identity and/or similarity are designed to give the largest match between the sequences tested. Methods to determine identity and similarity are codified in computer programs including, but are not limited to, the GCG program package, including GAP (Devereux, J., et al., Nucleic Acids Research 12(1):387 (1984); Genetics Computer Group, University of Wisconsin, Madison, WI), BLASTP, BLASTN, BLASTX, FASTA (Altschul, S.F. et al., J. Molec. Biol. 215:403-410 (1990), PSI-BLAST (Altschul S.F. et al., Nucleic Acids Res. vol. 25, pp. 3389-3402, herein incorporated by reference), eMatrix software (Wu et al., J. Comp. Biol., Vol. 6, pp. 219-235 (1999), herein incorporated by reference), eMotif software (Nevill-Manning et al, ISMB-97, Vol. 4, pp. 202-209, herein incorporated by reference), pFam software (Sonnhammer et al., Nucleic Acids Res., Vol. 26(1), pp. 320-322 (1998), herein incorporated by reference) and the Kyte-Doolittle hydrophobocity prediction algorithm (J. Mol Biol, 157, pp. 105-31 (1982), incorporated herein by reference). The BLAST programs are publicly available from the National Center for Biotechnology Information (NCBI) and other sources (BLAST Manual, Altschul, S., et al. NCB NLM NIH Bethesda, MD 20894; Altschul, S., et al., J. Mol. Biol. 215:403-410 (1990).

4.7 CHIMERIC AND FUSION PROTEINS

The invention also provides chimeric or fusion proteins. As used herein, a "chimeric protein" or "fusion protein" comprises a polypeptide of the invention operatively linked to

another polypeptide. Within a fusion protein the polypeptide according to the invention can correspond to all or a portion of a protein according to the invention. In one embodiment, a fusion protein comprises at least one biologically active portion of a protein according to the invention. In another embodiment, a fusion protein comprises at least two biologically active portions of a protein according to the invention. Within the fusion protein, the term "operatively linked" is intended to indicate that the polypeptide according to the invention and the other polypeptide are fused in-frame to each other. The polypeptide can be fused to the N-terminus or C-terminus.

For example, in one embodiment a fusion protein comprises a polypeptide according to the invention operably linked to the extracellular domain of a second protein.

In another embodiment, the fusion protein is a GST-fusion protein in which the polypeptide sequences of the invention are fused to the C-terminus of the GST (*i.e.*, glutathione S-transferase) sequences.

In another embodiment, the fusion protein is an immunoglobulin fusion protein in which the polypeptide sequences according to the invention comprises one or more domains are fused to sequences derived from a member of the immunoglobulin protein family. The immunoglobulin fusion proteins of the invention can be incorporated into pharmaceutical compositions and administered to a subject to inhibit an interaction between a ligand and a protein of the invention on the surface of a cell, to thereby suppress signal transduction *in vivo*. The immunoglobulin fusion proteins can be used to affect the bioavailability of a cognate ligand. Inhibition of the ligand/protein interaction may be useful therapeutically for both the treatment of proliferative and differentiative disorders, *e,g.,* cancer as well as modulating (*e.g.*, promoting or inhibiting) cell survival. Moreover, the immunoglobulin fusion proteins of the invention can be used as immunogens to produce antibodies in a subject, to purify ligands, and in screening assays to identify molecules that inhibit the interaction of a polypeptide of the invention with a ligand.

A chimeric or fusion protein of the invention can be produced by standard recombinant DNA techniques. For example, DNA fragments coding for the different polypeptide sequences are ligated together in-frame in accordance with conventional techniques, *e.g.*, by employing blunt-ended or stagger-ended termini for ligation, restriction enzyme digestion to provide for appropriate termini, filling-in of cohesive ends as appropriate, alkaline phosphatase treatment to avoid undesirable joining, and enzymatic ligation. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers. Alternatively, PCR amplification of gene fragments can be carried out using anchor primers that give rise to complementary overhangs between two consecutive gene fragments that can subsequently be annealed and reamplified to generate a chimeric gene sequence (see, for

example, Ausubel et al. (eds.) CURRENT PROTOCOLS IN MOLECULAR BIOLOGY, John Wiley & Sons, 1992). Moreover, many expression vectors are commercially available that already encode a fusion moiety (*e.g.*, a GST polypeptide). A nucleic acid encoding a polypeptide of the invention can be cloned into such an expression vector such that the fusion moiety is linked in-frame to the protein of the invention.

4.8 GENE THERAPY

Mutations in the polynucleotides of the invention gene may result in loss of normal function of the encoded protein. The invention thus provides gene therapy to restore normal activity of the polypeptides of the invention; or to treat disease states involving polypeptides of the invention. Delivery of a functional gene encoding polypeptides of the invention to appropriate cells is effected *ex vivo*, *in situ*, or *in vivo* by use of vectors, and more particularly viral vectors (*e.g.*, adenovirus, adeno-associated virus, or a retrovirus), or *ex vivo* by use of physical DNA transfer methods (*e.g.*, liposomes or chemical treatments). See, for example, Anderson, Nature, supplement to vol. 392, no. 6679, pp.25-20 (1998). For additional reviews of gene therapy technology see Friedmann, Science, 244: 1275-1281 (1989); Verma, Scientific American: 68-84 (1990); and Miller, Nature, 357: 455-460 (1992). Introduction of any one of the nucleotides of the present invention or a gene encoding the polypeptides of the present invention can also be accomplished with extrachromosomal substrates (transient expression) or artificial chromosomes (stable expression). Cells may also be cultured *ex vivo* in the presence of proteins of the present invention in order to proliferate or to produce a desired effect on or activity in such cells. Treated cells can then be introduced *in vivo* for therapeutic purposes. Alternatively, it is contemplated that in other human disease states, preventing the expression of or inhibiting the activity of polypeptides of the invention will be useful in treating the disease states. It is contemplated that antisense therapy or gene therapy could be applied to negatively regulate the expression of polypeptides of the invention.

Other methods inhibiting expression of a protein include the introduction of antisense molecules to the nucleic acids of the present invention, their complements, or their translated RNA sequences, by methods known in the art. Further, the polypeptides of the present invention can be inhibited by using targeted deletion methods, or the insertion of a negative regulatory element such as a silencer, which is tissue specific.

The present invention still further provides cells genetically engineered *in vivo* to express the polynucleotides of the invention, wherein such polynucleotides are in operative association with a regulatory sequence heterologous to the host cell which drives expression of the polynucleotides in

the cell. These methods can be used to increase or decrease the expression of the polynucleotides of the present invention.

Knowledge of DNA sequences provided by the invention allows for modification of cells to permit, increase, or decrease, expression of endogenous polypeptide. Cells can be modified (*e.g.*, by homologous recombination) to provide increased polypeptide expression by replacing, in whole or in part, the naturally occurring promoter with all or part of a heterologous promoter so that the cells express the protein at higher levels. The heterologous promoter is inserted in such a manner that it is operatively linked to the desired protein encoding sequences. See, for example, PCT International Publication No. WO 94/12650, PCT International Publication No. WO 92/20808, and PCT International Publication No. WO 91/09955. It is also contemplated that, in addition to heterologous promoter DNA, amplifiable marker DNA (*e.g.*, ada, dhfr, and the multifunctional CAD gene which encodes carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron DNA may be inserted along with the heterologous promoter DNA. If linked to the desired protein coding sequence, amplification of the marker DNA by standard selection methods results in co-amplification of the desired protein coding sequences in the cells.

In another embodiment of the present invention, cells and tissues may be engineered to express an endogenous gene comprising the polynucleotides of the invention under the control of inducible regulatory elements, in which case the regulatory sequences of the endogenous gene may be replaced by homologous recombination. As described herein, gene targeting can be used to replace a gene's existing regulatory region with a regulatory sequence isolated from a different gene or a novel regulatory sequence synthesized by genetic engineering methods. Such regulatory sequences may be comprised of promoters, enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional initiation sites, regulatory protein binding sites or combinations of said sequences. Alternatively, sequences which affect the structure or stability of the RNA or protein produced may be replaced, removed, added, or otherwise modified by targeting. These sequences include polyadenylation signals, mRNA stability elements, splice sites, leader sequences for enhancing or modifying transport or secretion properties of the protein, or other sequences which alter or improve the function or stability of protein or RNA molecules.

The targeting event may be a simple insertion of the regulatory sequence, placing the gene under the control of the new regulatory sequence, *e.g.*, inserting a new promoter or enhancer or both upstream of a gene. Alternatively, the targeting event may be a simple deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory element. Alternatively, the targeting event may replace an existing element; for example, a tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are

added. In all cases, the identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are contiguous with the targeting DNA, allowing for the selection of cells in which the exogenous DNA has integrated into the cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

4.9 TRANSGENIC ANIMALS

In preferred methods to determine biological functions of the polypeptides of the invention in vivo, one or more genes provided by the invention are either over expressed or inactivated in the germ line of animals using homologous recombination [Capecchi, Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals, preferably non-human mammals, can be prepared as described in U.S. Patent No. 5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals, are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

Transgenic animals can be prepared wherein all or part of a promoter of the polynucleotides of the invention is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or even replacing the homologous promoter to provide for increased protein expression. The homologous

promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

The polynucleotides of the present invention also make possible the development, through, *e.g.*, homologous recombination or knock out strategies, of animals that fail to express polypeptides of the invention or that express a variant polypeptide. Such animals are useful as models for studying the *in vivo* activities of polypeptide as well as for studying modulators of the polypeptides of the invention.

In preferred methods to determine biological functions of the polypeptides of the invention *in vivo*, one or more genes provided by the invention are either over expressed or inactivated in the germ line of animals using homologous recombination [Capecchi, Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals, preferably non-human mammals, can be prepared as described in U.S. Patent No. 5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals, are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

Transgenic animals can be prepared wherein all or part of the polynucleotides of the invention promoter is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or even replacing the homologous promoter to provide for increased protein expression. The homologous promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

4.10 USES AND BIOLOGICAL ACTIVITY

The polynucleotides and proteins of the present invention are expected to exhibit one or more of the uses or biological activities (including those associated with assays cited herein) identified herein. Uses or activities described for proteins of the present invention may be provided by administration or use of such proteins or of polynucleotides encoding such proteins (such as, for example, in gene therapies or vectors suitable for introduction of DNA). The mechanism underlying the particular condition or pathology will dictate whether the

polypeptides of the invention, the polynucleotides of the invention or modulators (activators or inhibitors) thereof would be beneficial to the subject in need of treatment. Thus, "therapeutic compositions of the invention" include compositions comprising isolated polynucleotides (including recombinant DNA molecules, cloned genes and degenerate variants thereof) or polypeptides of the invention (including full length protein, mature protein and truncations or domains thereof), or compounds and other substances that modulate the overall activity of the target gene products, either at the level of target gene/protein expression or target protein activity. Such modulators include polypeptides, analogs, (variants), including fragments and fusion proteins, antibodies and other binding proteins; chemical compounds that directly or indirectly activate or inhibit the polypeptides of the invention (identified, *e.g.*, via drug screening assays as described herein); antisense polynucleotides and polynucleotides suitable for triple helix formation; and in particular antibodies or other binding partners that specifically recognize one or more epitopes of the polypeptides of the invention.

The polypeptides of the present invention may likewise be involved in cellular activation or in one of the other physiological pathways described herein.

4.10.1 RESEARCH USES AND UTILITIES

The polynucleotides provided by the present invention can be used by the research community for various purposes. The polynucleotides can be used to express recombinant protein for analysis, characterization or therapeutic use; as markers for tissues in which the corresponding protein is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in disease states); as molecular weight markers on gels; as chromosome markers or tags (when labeled) to identify chromosomes or to map related gene positions; to compare with endogenous DNA sequences in patients to identify potential genetic disorders; as probes to hybridize and thus discover novel, related DNA sequences; as a source of information to derive PCR primers for genetic fingerprinting; as a probe to "subtract-out" known sequences in the process of discovering other novel polynucleotides; for selecting and making oligomers for attachment to a "gene chip" or other support, including for examination of expression patterns; to raise anti-protein antibodies using DNA immunization techniques; and as an antigen to raise anti-DNA antibodies or elicit another immune response. Where the polynucleotide encodes a protein which binds or potentially binds to another protein (such as, for example, in a receptor-ligand interaction), the polynucleotide can also be used in interaction trap assays (such as, for example, that described in Gyuris et al., Cell 75:791-803 (1993)) to identify polynucleotides encoding the other protein with which binding occurs or to identify inhibitors of the binding interaction.

The polypeptides provided by the present invention can similarly be used in assays to determine biological activity, including in a panel of multiple proteins for high-throughput screening; to raise antibodies or to elicit another immune response; as a reagent (including the labeled reagent) in assays designed to quantitatively determine levels of the protein (or its receptor) in biological fluids; as markers for tissues in which the corresponding polypeptide is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in a disease state); and, of course, to isolate correlative receptors or ligands. Proteins involved in these binding interactions can also be used to screen for peptide or small molecule inhibitors or agonists of the binding interaction.

Any or all of these research utilities are capable of being developed into reagent grade or kit format for commercialization as research products.

Methods for performing the uses listed above are well known to those skilled in the art. References disclosing such methods include without limitation "Molecular Cloning: A Laboratory Manual", 2d ed., Cold Spring Harbor Laboratory Press, Sambrook, J., E. F. Fritsch and T. Maniatis eds., 1989, and "Methods in Enzymology: Guide to Molecular Cloning Techniques", Academic Press, Berger, S. L. and A. R. Kimmel eds., 1987.

4.10.2 NUTRITIONAL USES

Polynucleotides and polypeptides of the present invention can also be used as nutritional sources or supplements. Such uses include without limitation use as a protein or amino acid supplement, use as a carbon source, use as a nitrogen source and use as a source of carbohydrate. In such cases the polypeptide or polynucleotide of the invention can be added to the feed of a particular organism or can be administered as a separate solid or liquid preparation, such as in the form of powder, pills, solutions, suspensions or capsules. In the case of microorganisms, the polypeptide or polynucleotide of the invention can be added to the medium in or on which the microorganism is cultured.

4.10.3 CYTOKINE AND CELL PROLIFERATION/DIFFERENTIATION ACTIVITY

A polypeptide of the present invention may exhibit activity relating to cytokine, cell proliferation (either inducing or inhibiting) or cell differentiation (either inducing or inhibiting) activity or may induce production of other cytokines in certain cell populations. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Many protein factors discovered to date, including all known cytokines, have exhibited activity in one or more factor-dependent cell proliferation assays, and hence the assays serve as a convenient

confirmation of cytokine activity. The activity of therapeutic compositions of the present invention is evidenced by any one of a number of routine factor dependent cell proliferation assays for cell lines including, without limitation, 32D, DA2, DA1G, T10, B9, B9/11, BaF3, MC9/G, M+(preB M+), 2E8, RB5, DA1, 123, T1165, HT2, CTLL2, TF-1, Mo7e, CMK, HUVEC, and Caco. Therapeutic compositions of the invention can be used in the following:

Assays for T-cell or thymocyte proliferation include without limitation those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol. 137:3494-3500, 1986; Bertagnolli et al., J. Immunol. 145:1706-1712, 1990; Bertagnolli et al., Cellular Immunology 133:327-341, 1991; Bertagnolli, et al., I. Immunol. 149:3778-3783, 1992; Bowman et al., I: Immunol. 152:1756-1761, 1994.

Assays for cytokine production and/or proliferation of spleen cells, lymph node cells or thymocytes include, without limitation, those described in: Polyclonal T cell stimulation, Kruisbeek, A. M. and Shevach, E. M. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 3.12.1-3.12.14, John Wiley and Sons, Toronto. 1994; and Measurement of mouse and human interleukin-γ, Schreiber, R. D. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 6.8.1-6.8.8, John Wiley and Sons, Toronto. 1994.

Assays for proliferation and differentiation of hematopoietic and lymphopoietic cells include, without limitation, those described in: Measurement of Human and Murine Interleukin 2 and Interleukin 4, Bottomly, K., Davis, L. S. and Lipsky, P. E. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 6.3.1-6.3.12, John Wiley and Sons, Toronto. 1991; deVries et al., J. Exp. Med. 173:1205-1211, 1991; Moreau et al., Nature 336:690-692, 1988; Greenberger et al., Proc. Natl. Acad. Sci. U.S.A. 80:2931-2938, 1983; Measurement of mouse and human interleukin 6--Nordan, R. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.6.1-6.6.5, John Wiley and Sons, Toronto. 1991; Smith et al., Proc. Natl. Aced. Sci. U.S.A. 83:1857-1861, 1986; Measurement of human Interleukin 11--Bennett, F., Giannotti, J., Clark, S. C. and Turner, K. J. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.15.1 John Wiley and Sons, Toronto. 1991; Measurement of mouse and human Interleukin 9--Ciarletta, A., Giannotti, J., Clark, S. C. and Turner, K. J. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.13.1, John Wiley and Sons, Toronto. 1991.

Assays for T-cell clone responses to antigens (which will identify, among others, proteins that affect APC-T cell interactions as well as direct T-cell effects by measuring proliferation and cytokine production) include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W Strober,

Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function; Chapter 6, Cytokines and their cellular receptors; Chapter 7, Immunologic studies in Humans); Weinberger et al., Proc. Natl. Acad. Sci. USA 77:6091-6095, 1980; Weinberger et al., Eur. J. Immun. 11:405-411, 1981; Takai et al., J. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988.

4.10.4 STEM CELL GROWTH FACTOR ACTIVITY

A polypeptide of the present invention may exhibit stem cell growth factor activity and be involved in the proliferation, differentiation and survival of pluripotent and totipotent stem cells including primordial germ cells, embryonic stem cells, hematopoietic stem cells and/or germ line stem cells. Administration of the polypeptide of the invention to stem cells *in vivo* or *ex vivo* is expected to maintain and expand cell populations in a totipotential or pluripotential state which would be useful for re-engineering damaged or diseased tissues, transplantation, manufacture of bio-pharmaceuticals and the development of bio-sensors. The ability to produce large quantities of human cells has important working applications for the production of human proteins which currently must be obtained from non-human sources or donors, implantation of cells to treat diseases such as Parkinson's, Alzheimer's and other neurodegenerative diseases; tissues for grafting such as bone marrow, skin, cartilage, tendons, bone, muscle (including cardiac muscle), blood vessels, cornea, neural cells, gastrointestinal cells and others; and organs for transplantation such as kidney, liver, pancreas (including islet cells), heart and lung.

It is contemplated that multiple different exogenous growth factors and/or cytokines may be administered in combination with the polypeptide of the invention to achieve the desired effect, including any of the growth factors listed herein, other stem cell maintenance factors, and specifically including stem cell factor (SCF), leukemia inhibitory factor (LIF), Flt-3 ligand (Flt-3L), any of the interleukins, recombinant soluble IL-6 receptor fused to IL-6, macrophage inflammatory protein 1-alpha (MIP-1-alpha), G-CSF, GM-CSF, thrombopoietin (TPO), platelet factor 4 (PF-4), platelet-derived growth factor (PDGF), neural growth factors and basic fibroblast growth factor (bFGF).

Since totipotent stem cells can give rise to virtually any mature cell type, expansion of these cells in culture will facilitate the production of large quantities of mature cells. Techniques for culturing stem cells are known in the art and administration of polypeptides of the invention, optionally with other growth factors and/or cytokines, is expected to enhance the survival and proliferation of the stem cell populations. This can be accomplished by direct administration of the polypeptide of the invention to the culture medium. Alternatively, stroma cells transfected with a polynucleotide that encodes for the polypeptide of the invention can be used as a feeder

layer for the stem cell populations in culture or in vivo. Stromal support cells for feeder layers may include embryonic bone marrow fibroblasts, bone marrow stromal cells, fetal liver cells, or cultured embryonic fibroblasts (see U.S. Patent No. 5,690,926).

Stem cells themselves can be transfected with a polynucleotide of the invention to induce autocrine expression of the polypeptide of the invention. This will allow for generation of undifferentiated totipotential/pluripotential stem cell lines that are useful as is or that can then be differentiated into the desired mature cell types. These stable cell lines can also serve as a source of undifferentiated totipotential/pluripotential mRNA to create cDNA libraries and templates for polymerase chain reaction experiments. These studies would allow for the isolation and identification of differentially expressed genes in stem cell populations that regulate stem cell proliferation and/or maintenance.

Expansion and maintenance of totipotent stem cell populations will be useful in the treatment of many pathological conditions. For example, polypeptides of the present invention may be used to manipulate stem cells in culture to give rise to neuroepithelial cells that can be used to augment or replace cells damaged by illness, autoimmune disease, accidental damage or genetic disorders. The polypeptide of the invention may be useful for inducing the proliferation of neural cells and for the regeneration of nerve and brain tissue, *i.e.* for the treatment of central and peripheral nervous system diseases and neuropathies, as well as mechanical and traumatic disorders which involve degeneration, death or trauma to neural cells or nerve tissue. In addition, the expanded stem cell populations can also be genetically altered for gene therapy purposes and to decrease host rejection of replacement tissues after grafting or implantation.

Expression of the polypeptide of the invention and its effect on stem cells can also be manipulated to achieve controlled differentiation of the stem cells into more differentiated cell types. A broadly applicable method of obtaining pure populations of a specific differentiated cell type from undifferentiated stem cell populations involves the use of a cell-type specific promoter driving a selectable marker. The selectable marker allows only cells of the desired type to survive. For example, stem cells can be induced to differentiate into cardiomyocytes (Wobus et al., Differentiation, 48: 173-182, (1991); Klug et al., J. Clin. Invest., 98(1): 216-224, (1998)) or skeletal muscle cells (Browder, L. W. In: *Principles of Tissue Engineering eds.* Lanza et al., Academic Press (1997)). Alternatively, directed differentiation of stem cells can be accomplished by culturing the stem cells in the presence of a differentiation factor such as retinoic acid and an antagonist of the polypeptide of the invention which would inhibit the effects of endogenous stem cell factor activity and allow differentiation to proceed.

In vitro cultures of stem cells can be used to determine if the polypeptide of the invention exhibits stem cell growth factor activity. Stem cells are isolated from any one of various cell

sources (including hematopoietic stem cells and embryonic stem cells) and cultured on a feeder layer, as described by Thompson et al. Proc. Natl. Acad. Sci, U.S.A., 92: 7844-7848 (1995), in the presence of the polypeptide of the invention alone or in combination with other growth factors or cytokines. The ability of the polypeptide of the invention to induce stem cells proliferation is determined by colony formation on semi-solid support *e.g.* as described by Bernstein et al., Blood, 77: 2316-2321 (1991).

4.10.5 HEMATOPOIESIS REGULATING ACTIVITY

A polypeptide of the present invention may be involved in regulation of hematopoiesis and, consequently, in the treatment of myeloid or lymphoid cell disorders. Even marginal biological activity in support of colony forming cells or of factor-dependent cell lines indicates involvement in regulating hematopoiesis, *e.g.* in supporting the growth and proliferation of erythroid progenitor cells alone or in combination with other cytokines, thereby indicating utility, for example, in treating various anemias or for use in conjunction with irradiation/chemotherapy to stimulate the production of erythroid precursors and/or erythroid cells; in supporting the growth and proliferation of myeloid cells such as granulocytes and monocytes/macrophages (*i.e.*, traditional CSF activity) useful, for example, in conjunction with chemotherapy to prevent or treat consequent myelo-suppression; in supporting the growth and proliferation of megakaryocytes and consequently of platelets thereby allowing prevention or treatment of various platelet disorders such as thrombocytopenia, and generally for use in place of or complimentary to platelet transfusions; and/or in supporting the growth and proliferation of hematopoietic stem cells which are capable of maturing to any and all of the above-mentioned hematopoietic cells and therefore find therapeutic utility in various stem cell disorders (such as those usually treated with transplantation, including, without limitation, aplastic anemia and paroxysmal nocturnal hemoglobinuria), as well as in repopulating the stem cell compartment post irradiation/chemotherapy, either *in-vivo* or *ex-vivo* (*i.e.*, in conjunction with bone marrow transplantation or with peripheral progenitor cell transplantation (homologous or heterologous)) as normal cells or genetically manipulated for gene therapy.

Therapeutic compositions of the invention can be used in the following:

Suitable assays for proliferation and differentiation of various hematopoietic lines are cited above.

Assays for embryonic stem cell differentiation (which will identify, among others, proteins that influence embryonic differentiation hematopoiesis) include, without limitation, those described in: Johansson et al. Cellular Biology 15:141-151, 1995; Keller et al., Molecular and Cellular Biology 13:473-486, 1993; McClanahan et al., Blood 81:2903-2915, 1993.

Assays for stem cell survival and differentiation (which will identify, among others, proteins that regulate lympho-hematopoiesis) include, without limitation, those described in: Methylcellulose colony forming assays, Freshney, M. G. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 265-268, Wiley-Liss, Inc., New York, N.Y. 1994; Hirayama et al., Proc. Natl. Acad. Sci. USA 89:5907-5911, 1992; Primitive hematopoietic colony forming cells with high proliferative potential, McNiece, I. K. and Briddell, R. A. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 23-39, Wiley-Liss, Inc., New York, N.Y. 1994; Neben et al., Experimental Hematology 22:353-359, 1994; Cobblestone area forming cell assay, Ploemacher, R. E. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 1-21, Wiley-Liss, Inc., New York, N.Y. 1994; Long term bone marrow cultures in the presence of stromal cells, Spooncer, E., Dexter, M. and Allen, T. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 163-179, Wiley-Liss, Inc., New York, N.Y. 1994; Long term culture initiating cell assay, Sutherland, H. J. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 139-162, Wiley-Liss, Inc., New York, N.Y. 1994.

4.10.6 TISSUE GROWTH ACTIVITY

A polypeptide of the present invention also may be involved in bone, cartilage, tendon, ligament and/or nerve tissue growth or regeneration, as well as in wound healing and tissue repair and replacement, and in healing of burns, incisions and ulcers.

A polypeptide of the present invention which induces cartilage and/or bone growth in circumstances where bone is not normally formed, has application in the healing of bone fractures and cartilage damage or defects in humans and other animals. Compositions of a polypeptide, antibody, binding partner, or other modulator of the invention may have prophylactic use in closed as well as open fracture reduction and also in the improved fixation of artificial joints. De novo bone formation induced by an osteogenic agent contributes to the repair of congenital, trauma induced, or oncologic resection induced craniofacial defects, and also is useful in cosmetic plastic surgery.

A polypeptide of this invention may also be involved in attracting bone-forming cells, stimulating growth of bone-forming cells, or inducing differentiation of progenitors of bone-forming cells. Treatment of osteoporosis, osteoarthritis, bone degenerative disorders, or periodontal disease, such as through stimulation of bone and/or cartilage repair or by blocking inflammation or processes of tissue destruction (collagenase activity, osteoclast activity, etc.) mediated by inflammatory processes may also be possible using the composition of the invention.

Another category of tissue regeneration activity that may involve the polypeptide of the present invention is tendon/ligament formation. Induction of tendon/ligament-like tissue or other tissue formation in circumstances where such tissue is not normally formed, has application in the healing of tendon or ligament tears, deformities and other tendon or ligament defects in humans and other animals. Such a preparation employing a tendon/ligament-like tissue inducing protein may have prophylactic use in preventing damage to tendon or ligament tissue, as well as use in the improved fixation of tendon or ligament to bone or other tissues, and in repairing defects to tendon or ligament tissue. De novo tendon/ligament-like tissue formation induced by a composition of the present invention contributes to the repair of congenital, trauma induced, or other tendon or ligament defects of other origin, and is also useful in cosmetic plastic surgery for attachment or repair of tendons or ligaments. The compositions of the present invention may provide environment to attract tendon- or ligament-forming cells, stimulate growth of tendon- or ligament-forming cells, induce differentiation of progenitors of tendon- or ligament-forming cells, or induce growth of tendon/ligament cells or progenitors *ex vivo* for return *in vivo* to effect tissue repair. The compositions of the invention may also be useful in the treatment of tendinitis, carpal tunnel syndrome and other tendon or ligament defects. The compositions may also include an appropriate matrix and/or sequestering agent as a carrier as is well known in the art.

The compositions of the present invention may also be useful for proliferation of neural cells and for regeneration of nerve and brain tissue, *i.e.* for the treatment of central and peripheral nervous system diseases and neuropathies, as well as mechanical and traumatic disorders, which involve degeneration, death or trauma to neural cells or nerve tissue. More specifically, a composition may be used in the treatment of diseases of the peripheral nervous system, such as peripheral nerve injuries, peripheral neuropathy and localized neuropathies, and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager syndrome. Further conditions which may be treated in accordance with the present invention include mechanical and traumatic disorders, such as spinal cord disorders, head trauma and cerebrovascular diseases such as stroke. Peripheral neuropathies resulting from chemotherapy or other medical therapies may also be treatable using a composition of the invention.

Compositions of the invention may also be useful to promote better or faster closure of non-healing wounds, including without limitation pressure ulcers, ulcers associated with vascular insufficiency, surgical and traumatic wounds, and the like.

Compositions of the present invention may also be involved in the generation or regeneration of other tissues, such as organs (including, for example, pancreas, liver, intestine,

kidney, skin, endothelium), muscle (smooth, skeletal or cardiac) and vascular (including vascular endothelium) tissue, or for promoting the growth of cells comprising such tissues. Part of the desired effects may be by inhibition or modulation of fibrotic scarring may allow normal tissue to regenerate. A polypeptide of the present invention may also exhibit angiogenic activity.

A composition of the present invention may also be useful for gut protection or regeneration and treatment of lung or liver fibrosis, reperfusion injury in various tissues, and conditions resulting from systemic cytokine damage.

A composition of the present invention may also be useful for promoting or inhibiting differentiation of tissues described above from precursor tissues or cells; or for inhibiting the growth of tissues described above.

Therapeutic compositions of the invention can be used in the following:

Assays for tissue generation activity include, without limitation, those described in: International Patent Publication No. WO95/16035 (bone, cartilage, tendon); International Patent Publication No. WO95/05846 (nerve, neuronal); International Patent Publication No. WO91/07491 (skin, endothelium).

Assays for wound healing activity include, without limitation, those described in: Winter, Epidermal Wound Healing, pps. 71-112 (Maibach, H. I. and Rovee, D. T., eds.), Year Book Medical Publishers, Inc., Chicago, as modified by Eaglstein and Mertz, J. Invest. Dermatol 71:382-84 (1978).

4.10.7 IMMUNE STIMULATING OR SUPPRESSING ACTIVITY

A polypeptide of the present invention may also exhibit immune stimulating or immune suppressing activity, including without limitation the activities for which assays are described herein. A polynucleotide of the invention can encode a polypeptide exhibiting such activities. A protein may be useful in the treatment of various immune deficiencies and disorders (including severe combined immunodeficiency (SCID)), *e.g.*, in regulating (up or down) growth and proliferation of T and/or B lymphocytes, as well as effecting the cytolytic activity of NK cells and other cell populations. These immune deficiencies may be genetic or be caused by viral (*e.g.*, HIV) as well as bacterial or fungal infections, or may result from autoimmune disorders. More specifically, infectious diseases causes by viral, bacterial, fungal or other infection may be treatable using a protein of the present invention, including infections by HIV, hepatitis viruses, herpes viruses, mycobacteria, Leishmania spp., malaria spp. and various fungal infections such as candidiasis. Of course, in this regard, proteins of the present invention may also be useful where a boost to the immune system generally may be desirable, *i.e.*, in the treatment of cancer.

Autoimmune disorders which may be treated using a protein of the present invention include, for example, connective tissue disease, multiple sclerosis, systemic lupus erythematosus, rheumatoid arthritis, autoimmune pulmonary inflammation, Guillain-Barre syndrome, autoimmune thyroiditis, insulin dependent diabetes mellitis, myasthenia gravis, graft-versus-host disease and autoimmune inflammatory eye disease. Such a protein (or antagonists thereof, including antibodies) of the present invention may also to be useful in the treatment of allergic reactions and conditions (*e.g.*, anaphylaxis, serum sickness, drug reactions, food allergies, insect venom allergies, mastocytosis, allergic rhinitis, hypersensitivity pneumonitis, urticaria, angioedema, eczema, atopic dermatitis, allergic contact dermatitis, erythema multiforme, Stevens-Johnson syndrome, allergic conjunctivitis, atopic keratoconjunctivitis, venereal keratoconjunctivitis, giant papillary conjunctivitis and contact allergies), such as asthma (particularly allergic asthma) or other respiratory problems. Other conditions, in which immune suppression is desired (including, for example, organ transplantation), may also be treatable using a protein (or antagonists thereof) of the present invention. The therapeutic effects of the polypeptides or antagonists thereof on allergic reactions can be evaluated by in vivo animals models such as the cumulative contact enhancement test (Lastbom et al., Toxicology 125: 59-66, 1998), skin prick test (Hoffmann et al., Allergy 54: 446-54, 1999), guinea pig skin sensitization test (Vohr et al., Arch. Toxocol. 73: 501-9), and murine local lymph node assay (Kimber et al., J. Toxicol. Environ. Health 53: 563-79).

Using the proteins of the invention it may also be possible to modulate immune responses, in a number of ways. Down regulation may be in the form of inhibiting or blocking an immune response already in progress or may involve preventing the induction of an immune response. The functions of activated T cells may be inhibited by suppressing T cell responses or by inducing specific tolerance in T cells, or both. Immunosuppression of T cell responses is generally an active, non-antigen-specific, process which requires continuous exposure of the T cells to the suppressive agent. Tolerance, which involves inducing non-responsiveness or anergy in T cells, is distinguishable from immunosuppression in that it is generally antigen-specific and persists after exposure to the tolerizing agent has ceased. Operationally, tolerance can be demonstrated by the lack of a T cell response upon reexposure to specific antigen in the absence of the tolerizing agent.

Down regulating or preventing one or more antigen functions (including without limitation B lymphocyte antigen functions (such as, for example, B7)), *e.g.*, preventing high level lymphokine synthesis by activated T cells, will be useful in situations of tissue, skin and organ transplantation and in graft-versus-host disease (GVHD). For example, blockage of T cell function should result in reduced tissue destruction in tissue transplantation. Typically, in tissue

transplants, rejection of the transplant is initiated through its recognition as foreign by T cells, followed by an immune reaction that destroys the transplant. The administration of a therapeutic composition of the invention may prevent cytokine synthesis by immune cells, such as T cells, and thus acts as an immunosuppressant. Moreover, a lack of costimulation may also be sufficient to anergize the T cells, thereby inducing tolerance in a subject. Induction of long-term tolerance by B lymphocyte antigen-blocking reagents may avoid the necessity of repeated administration of these blocking reagents. To achieve sufficient immunosuppression or tolerance in a subject, it may also be necessary to block the function of a combination of B lymphocyte antigens.

The efficacy of particular therapeutic compositions in preventing organ transplant rejection or GVHD can be assessed using animal models that are predictive of efficacy in humans. Examples of appropriate systems which can be used include allogeneic cardiac grafts in rats and xenogeneic pancreatic islet cell grafts in mice, both of which have been used to examine the immunosuppressive effects of CTLA4Ig fusion proteins in vivo as described in Lenschow et al., Science 257:789-792 (1992) and Turka et al., Proc. Natl. Acad. Sci USA, 89:11102-11105 (1992). In addition, murine models of GVHD (see Paul ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 846-847) can be used to determine the effect of therapeutic compositions of the invention on the development of that disease.

Blocking antigen function may also be therapeutically useful for treating autoimmune diseases. Many autoimmune disorders are the result of inappropriate activation of T cells that are reactive against self tissue and which promote the production of cytokines and autoantibodies involved in the pathology of the diseases. Preventing the activation of autoreactive T cells may reduce or eliminate disease symptoms. Administration of reagents which block stimulation of T cells can be used to inhibit T cell activation and prevent production of autoantibodies or T cell-derived cytokines which may be involved in the disease process. Additionally, blocking reagents may induce antigen-specific tolerance of autoreactive T cells which could lead to long-term relief from the disease. The efficacy of blocking reagents in preventing or alleviating autoimmune disorders can be determined using a number of well-characterized animal models of human autoimmune diseases. Examples include murine experimental autoimmune encephalitis, systemic lupus erythmatosis in MRL/lpr/lpr mice or NZB hybrid mice, murine autoimmune collagen arthritis, diabetes mellitus in NOD mice and BB rats, and murine experimental myasthenia gravis (see Paul ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 840-856).

Upregulation of an antigen function (*e.g.*, a B lymphocyte antigen function), as a means of up regulating immune responses, may also be useful in therapy. Upregulation of immune responses may be in the form of enhancing an existing immune response or eliciting an initial

immune response. For example, enhancing an immune response may be useful in cases of viral infection, including systemic viral diseases such as influenza, the common cold, and encephalitis.

Alternatively, anti-viral immune responses may be enhanced in an infected patient by removing T cells from the patient, costimulating the T cells in vitro with viral antigen-pulsed APCs either expressing a peptide of the present invention or together with a stimulatory form of a soluble peptide of the present invention and reintroducing the in vitro activated T cells into the patient. Another method of enhancing anti-viral immune responses would be to isolate infected cells from a patient, transfect them with a nucleic acid encoding a protein of the present invention as described herein such that the cells express all or a portion of the protein on their surface, and reintroduce the transfected cells into the patient. The infected cells would now be capable of delivering a costimulatory signal to, and thereby activate, T cells in vivo.

A polypeptide of the present invention may provide the necessary stimulation signal to T cells to induce a T cell mediated immune response against the transfected tumor cells. In addition, tumor cells which lack MHC class I or MHC class II molecules, or which fail to reexpress sufficient mounts of MHC class I or MHC class II molecules, can be transfected with nucleic acid encoding all or a portion of (*e.g.*, a cytoplasmic-domain truncated portion) of an MHC class I alpha chain protein and β_2 microglobulin protein or an MHC class II alpha chain protein and an MHC class II beta chain protein to thereby express MHC class I or MHC class II proteins on the cell surface. Expression of the appropriate class I or class II MHC in conjunction with a peptide having the activity of a B lymphocyte antigen (*e.g.*, B7-1, B7-2, B7-3) induces a T cell mediated immune response against the transfected tumor cell. Optionally, a gene encoding an antisense construct which blocks expression of an MHC class II associated protein, such as the invariant chain, can also be cotransfected with a DNA encoding a peptide having the activity of a B lymphocyte antigen to promote presentation of tumor associated antigens and induce tumor specific immunity. Thus, the induction of a T cell mediated immune response in a human subject may be sufficient to overcome tumor-specific tolerance in the subject.

The activity of a protein of the invention may, among other means, be measured by the following methods:

Suitable assays for thymocyte or splenocyte cytotoxicity include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Herrmann et al., Proc. Natl. Acad. Sci. USA 78:2488-2492, 1981; Herrmann et al., J. Immunol. 128:1968-1974, 1982; Handa et al., J.

Immunol. 135:1564-1572, 1985; Takai et al., I. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bowman et al., J. Virology 61:1992-1998; Bertagnolli et al., Cellular Immunology 133:327-341, 1991; Brown et al., J. Immunol. 153:3079-3092, 1994.

Assays for T-cell-dependent immunoglobulin responses and isotype switching (which will identify, among others, proteins that modulate T-cell dependent antibody responses and that affect Th1/Th2 profiles) include, without limitation, those described in: Maliszewski, J. Immunol. 144:3028-3033, 1990; and Assays for B cell function: In vitro antibody production, Mond, J. J. and Brunswick, M. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 3.8.1-3.8.16, John Wiley and Sons, Toronto. 1994.

Mixed lymphocyte reaction (MLR) assays (which will identify, among others, proteins that generate predominantly Th1 and CTL responses) include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bertagnolli et al., J. Immunol. 149:3778-3783, 1992.

Dendritic cell-dependent assays (which will identify, among others, proteins expressed by dendritic cells that activate naive T-cells) include, without limitation, those described in: Guery et al., J. Immunol. 134:536-544, 1995; Inaba et al., Journal of Experimental Medicine 173:549-559, 1991; Macatonia et al., Journal of Immunology 154:5071-5079, 1995; Porgador et al., Journal of Experimental Medicine 182:255-260, 1995; Nair et al., Journal of Virology 67:4062-4069, 1993; Huang et al., Science 264:961-965, 1994; Macatonia et al., Journal of Experimental Medicine 169:1255-1264, 1989; Bhardwaj et al., Journal of Clinical Investigation 94:797-807, 1994; and Inaba et al., Journal of Experimental Medicine 172:631-640, 1990.

Assays for lymphocyte survival/apoptosis (which will identify, among others, proteins that prevent apoptosis after superantigen induction and proteins that regulate lymphocyte homeostasis) include, without limitation, those described in: Darzynkiewicz et al., Cytometry 13:795-808, 1992; Gorczyca et al., Leukemia 7:659-670, 1993; Gorczyca et al., Cancer Research 53:1945-1951, 1993; Itoh et al., Cell 66:233-243, 1991; Zacharchuk, Journal of Immunology 145:4037-4045, 1990; Zamai et al., Cytometry 14:891-897, 1993; Gorczyca et al., International Journal of Oncology 1:639-648, 1992.

Assays for proteins that influence early steps of T-cell commitment and development include, without limitation, those described in: Antica et al., Blood 84:111-117, 1994; Fine et al., Cellular Immunology 155:111-122, 1994; Galy et al., Blood 85:2770-2778, 1995; Toki et al., Proc. Nat. Acad Sci. USA 88:7548-7551, 1991.

4.10.8 ACTIVIN/INHIBIN ACTIVITY

A polypeptide of the present invention may also exhibit activin- or inhibin-related activities. A polynucleotide of the invention may encode a polypeptide exhibiting such characteristics. Inhibins are characterized by their ability to inhibit the release of follicle stimulating hormone (FSH), while activins and are characterized by their ability to stimulate the release of follicle stimulating hormone (FSH). Thus, a polypeptide of the present invention, alone or in heterodimers with a member of the inhibin family, may be useful as a contraceptive based on the ability of inhibins to decrease fertility in female mammals and decrease spermatogenesis in male mammals. Administration of sufficient amounts of other inhibins can induce infertility in these mammals. Alternatively, the polypeptide of the invention, as a homodimer or as a heterodimer with other protein subunits of the inhibin group, may be useful as a fertility inducing therapeutic, based upon the ability of activin molecules in stimulating FSH release from cells of the anterior pituitary. See, for example, U.S. Pat. No. 4,798,885. A polypeptide of the invention may also be useful for advancement of the onset of fertility in sexually immature mammals, so as to increase the lifetime reproductive performance of domestic animals such as, but not limited to, cows, sheep and pigs.

The activity of a polypeptide of the invention may, among other means, be measured by the following methods.

Assays for activin/inhibin activity include, without limitation, those described in: Vale et al., Endocrinology 91:562-572, 1972; Ling et al., Nature 321:779-782, 1986; Vale et al., Nature 321:776-779, 1986; Mason et al., Nature 318:659-663, 1985; Forage et al., Proc. Natl. Acad. Sci. USA 83:3091-3095, 1986.

4.10.9 CHEMOTACTIC/CHEMOKINETIC ACTIVITY

A polypeptide of the present invention may be involved in chemotactic or chemokinetic activity for mammalian cells, including, for example, monocytes, fibroblasts, neutrophils, T-cells, mast cells, eosinophils, epithelial and/or endothelial cells. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Chemotactic and chemokinetic receptor activation can be used to mobilize or attract a desired cell population to a desired site of action. Chemotactic or chemokinetic compositions (*e.g.* proteins, antibodies, binding partners, or modulators of the invention) provide particular advantages in treatment of wounds and other trauma to tissues, as well as in treatment of localized infections. For example, attraction of lymphocytes, monocytes or neutrophils to tumors or sites of infection may result in improved immune responses against the tumor or infecting agent.

A protein or peptide has chemotactic activity for a particular cell population if it can stimulate, directly or indirectly, the directed orientation or movement of such cell population. Preferably, the protein or peptide has the ability to directly stimulate directed movement of cells. Whether a particular protein has chemotactic activity for a population of cells can be readily determined by employing such protein or peptide in any known assay for cell chemotaxis.

Therapeutic compositions of the invention can be used in the following:

Assays for chemotactic activity (which will identify proteins that induce or prevent chemotaxis) consist of assays that measure the ability of a protein to induce the migration of cells across a membrane as well as the ability of a protein to induce the adhesion of one cell population to another cell population. Suitable assays for movement and adhesion include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Marguiles, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 6.12, Measurement of alpha and beta Chemokines 6.12.1-6.12.28; Taub et al. J. Clin. Invest. 95:1370-1376, 1995; Lind et al. APMIS 103:140-146, 1995; Muller et al Eur. J. Immunol. 25:1744-1748; Gruber et al. J. of Immunol. 152:5860-5867, 1994; Johnston et al. J. of Immunol. 153:1762-1768, 1994.

4.10.10 HEMOSTATIC AND THROMBOLYTIC ACTIVITY

A polypeptide of the invention may also be involved in hemostatis or thrombolysis or thrombosis. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Compositions may be useful in treatment of various coagulation disorders (including hereditary disorders, such as hemophilias) or to enhance coagulation and other hemostatic events in treating wounds resulting from trauma, surgery or other causes. A composition of the invention may also be useful for dissolving or inhibiting formation of thromboses and for treatment and prevention of conditions resulting therefrom (such as, for example, infarction of cardiac and central nervous system vessels (*e.g.*, stroke).

Therapeutic compositions of the invention can be used in the following:

Assay for hemostatic and thrombolytic activity include, without limitation, those described in: Linet et al., J. Clin. Pharmacol. 26:131-140, 1986; Burdick et al., Thrombosis Res. 45:413-419, 1987; Humphrey et al., Fibrinolysis 5:71-79 (1991); Schaub, Prostaglandins 35:467-474, 1988.

4.10.11 CANCER DIAGNOSIS AND THERAPY

Polypeptides of the invention may be involved in cancer cell generation, proliferation or metastasis. Detection of the presence or amount of polynucleotides or polypeptides of the

invention may be useful for the diagnosis and/or prognosis of one or more types of cancer. For example, the presence or increased expression of a polynucleotide/polypeptide of the invention may indicate a hereditary risk of cancer, a precancerous condition, or an ongoing malignancy. Conversely, a defect in the gene or absence of the polypeptide may be associated with a cancer condition. Identification of single nucleotide polymorphisms associated with cancer or a predisposition to cancer may also be useful for diagnosis or prognosis.

Cancer treatments promote tumor regression by inhibiting tumor cell proliferation, inhibiting angiogenesis (growth of new blood vessels that is necessary to support tumor growth) and/or prohibiting metastasis by reducing tumor cell motility or invasiveness. Therapeutic compositions of the invention may be effective in adult and pediatric oncology including in solid phase tumors/malignancies, locally advanced tumors, human soft tissue sarcomas, metastatic cancer, including lymphatic metastases, blood cell malignancies including multiple myeloma, acute and chronic leukemias, and lymphomas, head and neck cancers including mouth cancer, larynx cancer and thyroid cancer, lung cancers including small cell carcinoma and non-small cell cancers, breast cancers including small cell carcinoma and ductal carcinoma, gastrointestinal cancers including esophageal cancer, stomach cancer, colon cancer, colorectal cancer and polyps associated with colorectal neoplasia, pancreatic cancers, liver cancer, urologic cancers including bladder cancer and prostate cancer, malignancies of the female genital tract including ovarian carcinoma, uterine (including endometrial) cancers, and solid tumor in the ovarian follicle, kidney cancers including renal cell carcinoma, brain cancers including intrinsic brain tumors, neuroblastoma, astrocytic brain tumors, gliomas, metastatic tumor cell invasion in the central nervous system, bone cancers including osteomas, skin cancers including malignant melanoma, tumor progression of human skin keratinocytes, squamous cell carcinoma, basal cell carcinoma, hemangiopericytoma and Karposi's sarcoma.

Polypeptides, polynucleotides, or modulators of polypeptides of the invention (including inhibitors and stimulators of the biological activity of the polypeptide of the invention) may be administered to treat cancer. Therapeutic compositions can be administered in therapeutically effective dosages alone or in combination with adjuvant cancer therapy such as surgery, chemotherapy, radiotherapy, thermotherapy, and laser therapy, and may provide a beneficial effect, *e.g.* reducing tumor size, slowing rate of tumor growth, inhibiting metastasis, or otherwise improving overall clinical condition, without necessarily eradicating the cancer.

The composition can also be administered in therapeutically effective amounts as a portion of an anti-cancer cocktail. An anti-cancer cocktail is a mixture of the polypeptide or modulator of the invention with one or more anti-cancer drugs in addition to a pharmaceutically acceptable carrier for delivery. The use of anti-cancer cocktails as a cancer treatment is routine.

Anti-cancer drugs that are well known in the art and can be used as a treatment in combination with the polypeptide or modulator of the invention include: Actinomycin D, Aminoglutethimide, Asparaginase, Bleomycin, Busulfan, Carboplatin, Carmustine, Chlorambucil, Cisplatin (cis-DDP), Cyclophosphamide, Cytarabine HCl (Cytosine arabinoside), Dacarbazine, Dactinomycin, Daunorubicin HCl, Doxorubicin HCl, Estramustine phosphate sodium, Etoposide (V16-213), Floxuridine, 5-Fluorouracil (5-Fu), Flutamide, Hydroxyurea (hydroxycarbamide), Ifosfamide, Interferon Alpha-2a, Interferon Alpha-2b, Leuprolide acetate (LHRH-releasing factor analog), Lomustine, Mechlorethamine HCl (nitrogen mustard), Melphalan, Mercaptopurine, Mesna, Methotrexate (MTX), Mitomycin, Mitoxantrone HCl, Octreotide, Plicamycin, Procarbazine HCl, Streptozocin, Tamoxifen citrate, Thioguanine, Thiotepa, Vinblastine sulfate, Vincristine sulfate, Amsacrine, Azacitidine, Hexamethylmelamine, Interleukin-2, Mitoguazone, Pentostatin, Semustine, Teniposide, and Vindesine sulfate.

In addition, therapeutic compositions of the invention may be used for prophylactic treatment of cancer. There are hereditary conditions and/or environmental situations (*e.g.* exposure to carcinogens) known in the art that predispose an individual to developing cancers. Under these circumstances, it may be beneficial to treat these individuals with therapeutically effective doses of the polypeptide of the invention to reduce the risk of developing cancers.

In vitro models can be used to determine the effective doses of the polypeptide of the invention as a potential cancer treatment. These *in vitro* models include proliferation assays of cultured tumor cells, growth of cultured tumor cells in soft agar (see Freshney, (1987) Culture of Animal Cells: A Manual of Basic Technique, Wily-Liss, New York, NY Ch 18 and Ch 21), tumor systems in nude mice as described in Giovanella et al., J. Natl. Can. Inst., 52: 921-30 (1974), mobility and invasive potential of tumor cells in Boyden Chamber assays as described in Pilkington et al., Anticancer Res., 17: 4107-9 (1997), and angiogenesis assays such as induction of vascularization of the chick chorioallantoic membrane or induction of vascular endothelial cell migration as described in Ribatta et al., Intl. J. Dev. Biol., 40: 1189-97 (1999) and Li et al., Clin. Exp. Metastasis, 17:423-9 (1999), respectively. Suitable tumor cells lines are available, *e.g.* from American Type Tissue Culture Collection catalogs.

4.10.12 RECEPTOR/LIGAND ACTIVITY

A polypeptide of the present invention may also demonstrate activity as receptor, receptor ligand or inhibitor or agonist of receptor/ligand interactions. A polynucleotide of the invention can encode a polypeptide exhibiting such characteristics. Examples of such receptors and ligands include, without limitation, cytokine receptors and their ligands, receptor kinases and their ligands, receptor phosphatases and their ligands, receptors involved in cell-cell interactions

and their ligands (including without limitation, cellular adhesion molecules (such as selectins, integrins and their ligands) and receptor/ligand pairs involved in antigen presentation, antigen recognition and development of cellular and humoral immune responses. Receptors and ligands are also useful for screening of potential peptide or small molecule inhibitors of the relevant receptor/ligand interaction. A protein of the present invention (including, without limitation, fragments of receptors and ligands) may themselves be useful as inhibitors of receptor/ligand interactions.

The activity of a polypeptide of the invention may, among other means, be measured by the following methods:

Suitable assays for receptor-ligand activity include without limitation those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley- Interscience (Chapter 7.28, Measurement of Cellular Adhesion under static conditions 7.28.1- 7.28.22), Takai et al., Proc. Natl. Acad. Sci. USA 84:6864-6868, 1987; Bierer et al., J. Exp. Med. 168:1145-1156, 1988; Rosenstein et al., J. Exp. Med. 169:149-160 1989; Stoltenborg et al., J. Immunol. Methods 175:59-68, 1994; Stitt et al., Cell 80:661-670, 1995.

By way of example, the polypeptides of the invention may be used as a receptor for a ligand(s) thereby transmitting the biological activity of that ligand(s). Ligands may be identified through binding assays, affinity chromatography, dihybrid screening assays, BIAcore assays, gel overlay assays, or other methods known in the art.

Studies characterizing drugs or proteins as agonist or antagonist or partial agonists or a partial antagonist require the use of other proteins as competing ligands. The polypeptides of the present invention or ligand(s) thereof may be labeled by being coupled to radioisotopes, colorimetric molecules or a toxin molecules by conventional methods. ("Guide to Protein Purification" Murray P. Deutscher (ed) Methods in Enzymology Vol. 182 (1990) Academic Press, Inc. San Diego). Examples of radioisotopes include, but are not limited to, tritium and carbon-14 . Examples of colorimetric molecules include, but are not limited to, fluorescent molecules such as fluorescamine, or rhodamine or other colorimetric molecules. Examples of toxins include, but are not limited, to ricin.

4.10.13 DRUG SCREENING

This invention is particularly useful for screening chemical compounds by using the novel polypeptides or binding fragments thereof in any of a variety of drug screening techniques. The polypeptides or fragments employed in such a test may either be free in solution, affixed to a solid support, borne on a cell surface or located intracellularly. One method of drug screening

utilizes eukaryotic or prokaryotic host cells which are stably transformed with recombinant nucleic acids expressing the polypeptide or a fragment thereof. Drugs are screened against such transformed cells in competitive binding assays. Such cells, either in viable or fixed form, can be used for standard binding assays. One may measure, for example, the formation of complexes between polypeptides of the invention or fragments and the agent being tested or examine the diminution in complex formation between the novel polypeptides and an appropriate cell line, which are well known in the art.

Sources for test compounds that may be screened for ability to bind to or modulate (*i.e.*, increase or decrease) the activity of polypeptides of the invention include (1) inorganic and organic chemical libraries, (2) natural product libraries, and (3) combinatorial libraries comprised of either random or mimetic peptides, oligonucleotides or organic molecules.

Chemical libraries may be readily synthesized or purchased from a number of commercial sources, and may include structural analogs of known compounds or compounds that are identified as "hits" or "leads" via natural product screening.

The sources of natural product libraries are microorganisms (including bacteria and fungi), animals, plants or other vegetation, or marine organisms, and libraries of mixtures for screening may be created by: (1) fermentation and extraction of broths from soil, plant or marine microorganisms or (2) extraction of the organisms themselves. Natural product libraries include polyketides, non-ribosomal peptides, and (non-naturally occurring) variants thereof. For a review, see *Science 282*:63-68 (1998).

Combinatorial libraries are composed of large numbers of peptides, oligonucleotides or organic compounds and can be readily prepared by traditional automated synthesis methods, PCR, cloning or proprietary synthetic methods. Of particular interest are peptide and oligonucleotide combinatorial libraries. Still other libraries of interest include peptide, protein, peptidomimetic, multiparallel synthetic collection, recombinatorial, and polypeptide libraries. For a review of combinatorial chemistry and libraries created therefrom, see Myers, *Curr. Opin. Biotechnol.* 8:701-707 (1997). For reviews and examples of peptidomimetic libraries, see Al-Obeidi et al., *Mol. Biotechnol*, 9(3):205-23 (1998); Hruby et al., *Curr Opin Chem Biol*, 1(1):114-19 (1997); Dorner et al., *Bioorg Med Chem*, 4(5):709-15 (1996) (alkylated dipeptides).

Identification of modulators through use of the various libraries described herein permits modification of the candidate "hit" (or "lead") to optimize the capacity of the "hit" to bind a polypeptide of the invention. The molecules identified in the binding assay are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

The binding molecules thus identified may be complexed with toxins, *e.g.*, ricin or cholera, or with other compounds that are toxic to cells such as radioisotopes. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity of the binding molecule for a polypeptide of the invention. Alternatively, the binding molecules may be complexed with imaging agents for targeting and imaging purposes.

4.10.14 ASSAY FOR RECEPTOR ACTIVITY

The invention also provides methods to detect specific binding of a polypeptide *e.g.* a ligand or a receptor. The art provides numerous assays particularly useful for identifying previously unknown binding partners for receptor polypeptides of the invention. For example, expression cloning using mammalian or bacterial cells, or dihybrid screening assays can be used to identify polynucleotides encoding binding partners. As another example, affinity chromatography with the appropriate immobilized polypeptide of the invention can be used to isolate polypeptides that recognize and bind polypeptides of the invention. There are a number of different libraries used for the identification of compounds, and in particular small molecules, that modulate (*i.e.,* increase or decrease) biological activity of a polypeptide of the invention. Ligands for receptor polypeptides of the invention can also be identified by adding exogenous ligands, or cocktails of ligands to two cells populations that are genetically identical except for the expression of the receptor of the invention: one cell population expresses the receptor of the invention whereas the other does not. The response of the two cell populations to the addition of ligands(s) are then compared. Alternatively, an expression library can be co-expressed with the polypeptide of the invention in cells and assayed for an autocrine response to identify potential ligand(s). As still another example, BIAcore assays, gel overlay assays, or other methods known in the art can be used to identify binding partner polypeptides, including, (1) organic and inorganic chemical libraries, (2) natural product libraries, and (3) combinatorial libraries comprised of random peptides, oligonucleotides or organic molecules.

The role of downstream intracellular signaling molecules in the signaling cascade of the polypeptide of the invention can be determined. For example, a chimeric protein in which the cytoplasmic domain of the polypeptide of the invention is fused to the extracellular portion of a protein, whose ligand has been identified, is produced in a host cell. The cell is then incubated with the ligand specific for the extracellular portion of the chimeric protein, thereby activating the chimeric receptor. Known downstream proteins involved in intracellular signaling can then be assayed for expected modifications *i.e.* phosphorylation. Other methods known to those in the art can also be used to identify signaling molecules involved in receptor activity.

4.10.15 ANTI-INFLAMMATORY ACTIVITY

Compositions of the present invention may also exhibit anti-inflammatory activity. The anti-inflammatory activity may be achieved by providing a stimulus to cells involved in the inflammatory response, by inhibiting or promoting cell-cell interactions (such as, for example, cell adhesion), by inhibiting or promoting chemotaxis of cells involved in the inflammatory process, inhibiting or promoting cell extravasation, or by stimulating or suppressing production of other factors which more directly inhibit or promote an inflammatory response. Compositions with such activities can be used to treat inflammatory conditions including chronic or acute conditions), including without limitation intimation associated with infection (such as septic shock, sepsis or systemic inflammatory response syndrome (SIRS)), ischemia-reperfusion injury, endotoxin lethality, arthritis, complement-mediated hyperacute rejection, nephritis, cytokine or chemokine-induced lung injury, inflammatory bowel disease, Crohn's disease or resulting from over production of cytokines such as TNF or IL-1. Compositions of the invention may also be useful to treat anaphylaxis and hypersensitivity to an antigenic substance or material. Compositions of this invention may be utilized to prevent or treat conditions such as, but not limited to, sepsis, acute pancreatitis, endotoxin shock, cytokine induced shock, rheumatoid arthritis, chronic inflammatory arthritis, pancreatic cell damage from diabetes mellitus type 1, graft versus host disease, inflammatory bowel disease, inflamation associated with pulmonary disease, other autoimmune disease or inflammatory disease, an antiproliferative agent such as for acute or chronic mylegenous leukemia or in the prevention of premature labor secondary to intrauterine infections.

4.10.16 LEUKEMIAS

Leukemias and related disorders may be treated or prevented by administration of a therapeutic that promotes or inhibits function of the polynucleotides and/or polypeptides of the invention. Such leukemias and related disorders include but are not limited to acute leukemia, acute lymphocytic leukemia, acute myelocytic leukemia, myeloblastic, promyelocytic, myelomonocytic, monocytic, erythroleukemia, chronic leukemia, chronic myelocytic (granulocytic) leukemia and chronic lymphocytic leukemia (for a review of such disorders, see Fishman et al., 1985, Medicine, 2d Ed., J.B. Lippincott Co., Philadelphia).

4.10.17 NERVOUS SYSTEM DISORDERS

Nervous system disorders, involving cell types which can be tested for efficacy of intervention with compounds that modulate the activity of the polynucleotides and/or polypeptides of the invention, and which can be treated upon thus observing an indication of

therapeutic utility, include but are not limited to nervous system injuries, and diseases or disorders which result in either a disconnection of axons, a diminution or degeneration of neurons, or demyelination. Nervous system lesions which may be treated in a patient (including human and non-human mammalian patients) according to the invention include but are not limited to the following lesions of either the central (including spinal cord, brain) or peripheral nervous systems:

(i) traumatic lesions, including lesions caused by physical injury or associated with surgery, for example, lesions which sever a portion of the nervous system, or compression injuries;

(ii) ischemic lesions, in which a lack of oxygen in a portion of the nervous system results in neuronal injury or death, including cerebral infarction or ischemia, or spinal cord infarction or ischemia;

(iii) infectious lesions, in which a portion of the nervous system is destroyed or injured as a result of infection, for example, by an abscess or associated with infection by human immunodeficiency virus, herpes zoster, or herpes simplex virus or with Lyme disease, tuberculosis, syphilis;

(iv) degenerative lesions, in which a portion of the nervous system is destroyed or injured as a result of a degenerative process including but not limited to degeneration associated with Parkinson's disease, Alzheimer's disease, Huntington's chorea, or amyotrophic lateral sclerosis;

(v) lesions associated with nutritional diseases or disorders, in which a portion of the nervous system is destroyed or injured by a nutritional disorder or disorder of metabolism including but not limited to, vitamin B12 deficiency, folic acid deficiency, Wernicke disease, tobacco-alcohol amblyopia, Marchiafava-Bignami disease (primary degeneration of the corpus callosum), and alcoholic cerebellar degeneration;

(vi) neurological lesions associated with systemic diseases including but not limited to diabetes (diabetic neuropathy, Bell's palsy), systemic lupus erythematosus, carcinoma, or sarcoidosis;

(vii) lesions caused by toxic substances including alcohol, lead, or particular neurotoxins; and

(viii) demyelinated lesions in which a portion of the nervous system is destroyed or injured by a demyelinating disease including but not limited to multiple sclerosis, human immunodeficiency virus-associated myelopathy, transverse myelopathy or various etiologies, progressive multifocal leukoencephalopathy, and central pontine myelinolysis.

Therapeutics which are useful according to the invention for treatment of a nervous system disorder may be selected by testing for biological activity in promoting the survival or differentiation of neurons. For example, and not by way of limitation, therapeutics which elicit any of the following effects may be useful according to the invention:

(i) increased survival time of neurons in culture;

(ii) increased sprouting of neurons in culture or in vivo;

(iii) increased production of a neuron-associated molecule in culture or *in vivo*, *e.g.*, choline acetyltransferase or acetylcholinesterase with respect to motor neurons; or

(iv) decreased symptoms of neuron dysfunction in vivo.

Such effects may be measured by any method known in the art. In preferred, non-limiting embodiments, increased survival of neurons may be measured by the method set forth in Arakawa et al. (1990, J. Neurosci. 10:3507-3515); increased sprouting of neurons may be detected by methods set forth in Pestronk et al. (1980, Exp. Neurol. 70:65-82) or Brown et al. (1981, Ann. Rev. Neurosci. 4:17-42); increased production of neuron-associated molecules may be measured by bioassay, enzymatic assay, antibody binding, Northern blot assay, *etc.*, depending on the molecule to be measured; and motor neuron dysfunction may be measured by assessing the physical manifestation of motor neuron disorder, *e.g.*, weakness, motor neuron conduction velocity, or functional disability.

In specific embodiments, motor neuron disorders that may be treated according to the invention include but are not limited to disorders such as infarction, infection, exposure to toxin, trauma, surgical damage, degenerative disease or malignancy that may affect motor neurons as well as other components of the nervous system, as well as disorders that selectively affect neurons such as amyotrophic lateral sclerosis, and including but not limited to progressive spinal muscular atrophy, progressive bulbar palsy, primary lateral sclerosis, infantile and juvenile muscular atrophy, progressive bulbar paralysis of childhood (Fazio-Londe syndrome), poliomyelitis and the post polio syndrome, and Hereditary Motorsensory Neuropathy (Charcot-Marie-Tooth Disease).

4.10.18 OTHER ACTIVITIES

A polypeptide of the invention may also exhibit one or more of the following additional activities or effects: inhibiting the growth, infection or function of, or killing, infectious agents, including, without limitation, bacteria, viruses, fungi and other parasites; effecting (suppressing or enhancing) bodily characteristics, including, without limitation, height, weight, hair color, eye color, skin, fat to lean ratio or other tissue pigmentation, or organ or body part size or shape (such as, for example, breast augmentation or diminution, change in bone form or shape);

effecting biorhythms or circadian cycles or rhythms; effecting the fertility of male or female subjects; effecting the metabolism, catabolism, anabolism, processing, utilization, storage or elimination of dietary fat, lipid, protein, carbohydrate, vitamins, minerals, co-factors or other nutritional factors or component(s); effecting behavioral characteristics, including, without limitation, appetite, libido, stress, cognition (including cognitive disorders), depression (including depressive disorders) and violent behaviors; providing analgesic effects or other pain reducing effects; promoting differentiation and growth of embryonic stem cells in lineages other than hematopoietic lineages; hormonal or endocrine activity; in the case of enzymes, correcting deficiencies of the enzyme and treating deficiency-related diseases; treatment of hyperproliferative disorders (such as, for example, psoriasis); immunoglobulin-like activity (such as, for example, the ability to bind antigens or complement); and the ability to act as an antigen in a vaccine composition to raise an immune response against such protein or another material or entity which is cross-reactive with such protein.

4.10.19 IDENTIFICATION OF POLYMORPHISMS

The demonstration of polymorphisms makes possible the identification of such polymorphisms in human subjects and the pharmacogenetic use of this information for diagnosis and treatment. Such polymorphisms may be associated with, *e.g.*, differential predisposition or susceptibility to various disease states (such as disorders involving inflammation or immune response) or a differential response to drug administration, and this genetic information can be used to tailor preventive or therapeutic treatment appropriately. For example, the existence of a polymorphism associated with a predisposition to inflammation or autoimmune disease makes possible the diagnosis of this condition in humans by identifying the presence of the polymorphism.

Polymorphisms can be identified in a variety of ways known in the art which all generally involve obtaining a sample from a patient, analyzing DNA from the sample, optionally involving isolation or amplification of the DNA, and identifying the presence of the polymorphism in the DNA. For example, PCR may be used to amplify an appropriate fragment of genomic DNA which may then be sequenced. Alternatively, the DNA may be subjected to allele-specific oligonucleotide hybridization (in which appropriate oligonucleotides are hybridized to the DNA under conditions permitting detection of a single base mismatch) or to a single nucleotide extension assay (in which an oligonucleotide that hybridizes immediately adjacent to the position of the polymorphism is extended with one or more labeled nucleotides). In addition, traditional restriction fragment length polymorphism analysis (using restriction enzymes that provide differential digestion of the genomic DNA depending on the presence or

absence of the polymorphism) may be performed. Arrays with nucleotide sequences of the present invention can be used to detect polymorphisms. The array can comprise modified nucleotide sequences of the present invention in order to detect the nucleotide sequences of the present invention. In the alternative, any one of the nucleotide sequences of the present invention can be placed on the array to detect changes from those sequences.

Alternatively a polymorphism resulting in a change in the amino acid sequence could also be detected by detecting a corresponding change in amino acid sequence of the protein, *e.g.*, by an antibody specific to the variant sequence.

4.10.20 ARTHRITIS AND INFLAMMATION

The immunosuppressive effects of the compositions of the invention against rheumatoid arthritis is determined in an experimental animal model system. The experimental model system is adjuvant induced arthritis in rats, and the protocol is described by J. Holoshitz, et at., 1983, Science, 219:56, or by B. Waksman et al., 1963, Int. Arch. Allergy Appl. Immunol., 23:129. Induction of the disease can be caused by a single injection, generally intradermally, of a suspension of killed Mycobacterium tuberculosis in complete Freund's adjuvant (CFA). The route of injection can vary, but rats may be injected at the base of the tail with an adjuvant mixture. The polypeptide is administered in phosphate buffered solution (PBS) at a dose of about 1-5 mg/kg. The control consists of administering PBS only.

The procedure for testing the effects of the test compound would consist of intradermally injecting killed Mycobacterium tuberculosis in CFA followed by immediately administering the test compound and subsequent treatment every other day until day 24. At 14, 15, 18, 20, 22, and 24 days after injection of Mycobacterium CFA, an overall arthritis score may be obtained as described by J. Holoskitz above. An analysis of the data would reveal that the test compound would have a dramatic affect on the swelling of the joints as measured by a decrease of the arthritis score.

4.11 THERAPEUTIC METHODS

The compositions (including polypeptide fragments, analogs, variants and antibodies or other binding partners or modulators including antisense polynucleotides) of the invention have numerous applications in a variety of therapeutic methods. Examples of therapeutic applications include, but are not limited to, those exemplified herein.

4.11.1 EXAMPLE

One embodiment of the invention is the administration of an effective amount of the polypeptides or other composition of the invention to individuals affected by a disease or disorder that can be modulated by regulating the peptides of the invention. While the mode of administration is not particularly important, parenteral administration is preferred. An exemplary mode of administration is to deliver an intravenous bolus. The dosage of the polypeptides or other composition of the invention will normally be determined by the prescribing physician. It is to be expected that the dosage will vary according to the age, weight, condition and response of the individual patient. Typically, the amount of polypeptide administered per dose will be in the range of about 0.01μg/kg to 100 mg/kg of body weight, with the preferred dose being about 0.1μg/kg to 10 mg/kg of patient body weight. For parenteral administration, polypeptides of the invention will be formulated in an injectable form combined with a pharmaceutically acceptable parenteral vehicle. Such vehicles are well known in the art and examples include water, saline, Ringer's solution, dextrose solution, and solutions consisting of small amounts of the human serum albumin. The vehicle may contain minor amounts of additives that maintain the isotonicity and stability of the polypeptide or other active ingredient. The preparation of such solutions is within the skill of the art.

4.12 PHARMACEUTICAL FORMULATIONS AND ROUTES OF ADMINISTRATION

A protein or other composition of the present invention (from whatever source derived, including without limitation from recombinant and non-recombinant sources and including antibodies and other binding partners of the polypeptides of the invention) may be administered to a patient in need, by itself, or in pharmaceutical compositions where it is mixed with suitable carriers or excipient(s) at doses to treat or ameliorate a variety of disorders. Such a composition may optionally contain (in addition to protein or other active ingredient and a carrier) diluents, fillers, salts, buffers, stabilizers, solubilizers, and other materials well known in the art. The term "pharmaceutically acceptable" means a non-toxic material that does not interfere with the effectiveness of the biological activity of the active ingredient(s). The characteristics of the carrier will depend on the route of administration. The pharmaceutical composition of the invention may also contain cytokines, lymphokines, or other hematopoietic factors such as M-CSF, GM-CSF, TNF, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IFN, TNF0, TNF1, TNF2, G-CSF, Meg-CSF, thrombopoietin, stem cell factor, and erythropoietin. In further compositions, proteins of the invention may be combined with other agents beneficial to the treatment of the disease or disorder in question. These agents include various growth factors such as epidermal growth factor (EGF), platelet-derived growth

factor (PDGF), transforming growth factors (TGF-α and TGF-β), insulin-like growth factor (IGF), as well as cytokines described herein.

The pharmaceutical composition may further contain other agents which either enhance the activity of the protein or other active ingredient or complement its activity or use in treatment. Such additional factors and/or agents may be included in the pharmaceutical composition to produce a synergistic effect with protein or other active ingredient of the invention, or to minimize side effects. Conversely, protein or other active ingredient of the present invention may be included in formulations of the particular clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or anti-thrombotic factor, or anti-inflammatory agent to minimize side effects of the clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or anti-thrombotic factor, or anti-inflammatory agent (such as IL-1Ra, IL-1 Hy1, IL-1 Hy2, anti-TNF, corticosteroids, immunosuppressive agents). A protein of the present invention may be active in multimers (*e.g.*, heterodimers or homodimers) or complexes with itself or other proteins. As a result, pharmaceutical compositions of the invention may comprise a protein of the invention in such multimeric or complexed form.

As an alternative to being included in a pharmaceutical composition of the invention including a first protein, a second protein or a therapeutic agent may be concurrently administered with the first protein (*e.g.*, at the same time, or at differing times provided that therapeutic concentrations of the combination of agents is achieved at the treatment site). Techniques for formulation and administration of the compounds of the instant application may be found in "Remington's Pharmaceutical Sciences," Mack Publishing Co., Easton, PA, latest edition. A therapeutically effective dose further refers to that amount of the compound sufficient to result in amelioration of symptoms, *e.g.*, treatment, healing, prevention or amelioration of the relevant medical condition, or an increase in rate of treatment, healing, prevention or amelioration of such conditions. When applied to an individual active ingredient, administered alone, a therapeutically effective dose refers to that ingredient alone. When applied to a combination, a therapeutically effective dose refers to combined amounts of the active ingredients that result in the therapeutic effect, whether administered in combination, serially or simultaneously.

In practicing the method of treatment or use of the present invention, a therapeutically effective amount of protein or other active ingredient of the present invention is administered to a mammal having a condition to be treated. Protein or other active ingredient of the present invention may be administered in accordance with the method of the invention either alone or in combination with other therapies such as treatments employing cytokines, lymphokines or other hematopoietic factors. When co- administered with one or more cytokines, lymphokines or other

hematopoietic factors, protein or other active ingredient of the present invention may be administered either simultaneously with the cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors, or sequentially. If administered sequentially, the attending physician will decide on the appropriate sequence of administering protein or other active ingredient of the present invention in combination with cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors.

4.12.1 ROUTES OF ADMINISTRATION

Suitable routes of administration may, for example, include oral, rectal, transmucosal, or intestinal administration; parenteral delivery, including intramuscular, subcutaneous, intramedullary injections, as well as intrathecal, direct intraventricular, intravenous, intraperitoneal, intranasal, or intraocular injections. Administration of protein or other active ingredient of the present invention used in the pharmaceutical composition or to practice the method of the present invention can be carried out in a variety of conventional ways, such as oral ingestion, inhalation, topical application or cutaneous, subcutaneous, intraperitoneal, parenteral or intravenous injection. Intravenous administration to the patient is preferred.

Alternately, one may administer the compound in a local rather than systemic manner, for example, via injection of the compound directly into a arthritic joints or in fibrotic tissue, often in a depot or sustained release formulation. In order to prevent the scarring process frequently occurring as complication of glaucoma surgery, the compounds may be administered topically, for example, as eye drops. Furthermore, one may administer the drug in a targeted drug delivery system, for example, in a liposome coated with a specific antibody, targeting, for example, arthritic or fibrotic tissue. The liposomes will be targeted to and taken up selectively by the afflicted tissue.

The polypeptides of the invention are administered by any route that delivers an effective dosage to the desired site of action. The determination of a suitable route of administration and an effective dosage for a particular indication is within the level of skill in the art. Preferably for wound treatment, one administers the therapeutic compound directly to the site. Suitable dosage ranges for the polypeptides of the invention can be extrapolated from these dosages or from similar studies in appropriate animal models. Dosages can then be adjusted as necessary by the clinician to provide maximal therapeutic benefit.

4.12.2 COMPOSITIONS/FORMULATIONS

Pharmaceutical compositions for use in accordance with the present invention thus may be formulated in a conventional manner using one or more physiologically acceptable carriers

comprising excipients and auxiliaries which facilitate processing of the active compounds into preparations which can be used pharmaceutically. These pharmaceutical compositions may be manufactured in a manner that is itself known, *e.g.*, by means of conventional mixing, dissolving, granulating, dragee-making, levigating, emulsifying, encapsulating, entrapping or lyophilizing processes. Proper formulation is dependent upon the route of administration chosen. When a therapeutically effective amount of protein or other active ingredient of the present invention is administered orally, protein or other active ingredient of the present invention will be in the form of a tablet, capsule, powder, solution or elixir. When administered in tablet form, the pharmaceutical composition of the invention may additionally contain a solid carrier such as a gelatin or an adjuvant. The tablet, capsule, and powder contain from about 5 to 95% protein or other active ingredient of the present invention, and preferably from about 25 to 90% protein or other active ingredient of the present invention. When administered in liquid form, a liquid carrier such as water, petroleum, oils of animal or plant origin such as peanut oil, mineral oil, soybean oil, or sesame oil, or synthetic oils may be added. The liquid form of the pharmaceutical composition may further contain physiological saline solution, dextrose or other saccharide solution, or glycols such as ethylene glycol, propylene glycol or polyethylene glycol. When administered in liquid form, the pharmaceutical composition contains from about 0.5 to 90% by weight of protein or other active ingredient of the present invention, and preferably from about 1 to 50% protein or other active ingredient of the present invention.

When a therapeutically effective amount of protein or other active ingredient of the present invention is administered by intravenous, cutaneous or subcutaneous injection, protein or other active ingredient of the present invention will be in the form of a pyrogen-free, parenterally acceptable aqueous solution. The preparation of such parenterally acceptable protein or other active ingredient solutions, having due regard to pH, isotonicity, stability, and the like, is within the skill in the art. A preferred pharmaceutical composition for intravenous, cutaneous, or subcutaneous injection should contain, in addition to protein or other active ingredient of the present invention, an isotonic vehicle such as Sodium Chloride Injection, Ringer's Injection, Dextrose Injection, Dextrose and Sodium Chloride Injection, Lactated Ringer's Injection, or other vehicle as known in the art. The pharmaceutical composition of the present invention may also contain stabilizers, preservatives, buffers, antioxidants, or other additives known to those of skill in the art. For injection, the agents of the invention may be formulated in aqueous solutions, preferably in physiologically compatible buffers such as Hanks's solution, Ringer's solution, or physiological saline buffer. For transmucosal administration, penetrants appropriate to the barrier to be permeated are used in the formulation. Such penetrants are generally known in the art.

For oral administration, the compounds can be formulated readily by combining the active compounds with pharmaceutically acceptable carriers well known in the art. Such carriers enable the compounds of the invention to be formulated as tablets, pills, dragees, capsules, liquids, gels, syrups, slurries, suspensions and the like, for oral ingestion by a patient to be treated. Pharmaceutical preparations for oral use can be obtained from a solid excipient, optionally grinding a resulting mixture, and processing the mixture of granules, after adding suitable auxiliaries, if desired, to obtain tablets or dragee cores. Suitable excipients are, in particular, fillers such as sugars, including lactose, sucrose, mannitol, or sorbitol; cellulose preparations such as, for example, maize starch, wheat starch, rice starch, potato starch, gelatin, gum tragacanth, methyl cellulose, hydroxypropylmethyl-cellulose, sodium carboxymethylcellulose, and/or polyvinylpyrrolidone (PVP). If desired, disintegrating agents may be added, such as the cross-linked polyvinyl pyrrolidone, agar, or alginic acid or a salt thereof such as sodium alginate. Dragee cores are provided with suitable coatings. For this purpose, concentrated sugar solutions may be used, which may optionally contain gum arabic, talc, polyvinyl pyrrolidone, carbopol gel, polyethylene glycol, and/or titanium dioxide, lacquer solutions, and suitable organic solvents or solvent mixtures. Dyestuffs or pigments may be added to the tablets or dragee coatings for identification or to characterize different combinations of active compound doses.

Pharmaceutical preparations which can be used orally include push-fit capsules made of gelatin, as well as soft, sealed capsules made of gelatin and a plasticizer, such as glycerol or sorbitol. The push-fit capsules can contain the active ingredients in admixture with filler such as lactose, binders such as starches, and/or lubricants such as talc or magnesium stearate and, optionally, stabilizers. In soft capsules, the active compounds may be dissolved or suspended in suitable liquids, such as fatty oils, liquid paraffin, or liquid polyethylene glycols. In addition, stabilizers may be added. All formulations for oral administration should be in dosages suitable for such administration. For buccal administration, the compositions may take the form of tablets or lozenges formulated in conventional manner.

For administration by inhalation, the compounds for use according to the present invention are conveniently delivered in the form of an aerosol spray presentation from pressurized packs or a nebuliser, with the use of a suitable propellant, *e.g.*, dichlorodifluoromethane, trichlorofluoromethane, dichlorotetrafluoroethane, carbon dioxide or other suitable gas. In the case of a pressurized aerosol the dosage unit may be determined by providing a valve to deliver a metered amount. Capsules and cartridges of, *e.g.*, gelatin for use in an inhaler or insufflator may be formulated containing a powder mix of the compound and a suitable powder base such as lactose or starch. The compounds may be formulated for parenteral

administration by injection, *e.g.*, by bolus injection or continuous infusion. Formulations for injection may be presented in unit dosage form, *e.g.*, in ampules or in multi-dose containers, with an added preservative. The compositions may take such forms as suspensions, solutions or emulsions in oily or aqueous vehicles, and may contain formulatory agents such as suspending, stabilizing and/or dispersing agents.

Pharmaceutical formulations for parenteral administration include aqueous solutions of the active compounds in water-soluble form. Additionally, suspensions of the active compounds may be prepared as appropriate oily injection suspensions. Suitable lipophilic solvents or vehicles include fatty oils such as sesame oil, or synthetic fatty acid esters, such as ethyl oleate or triglycerides, or liposomes. Aqueous injection suspensions may contain substances which increase the viscosity of the suspension, such as sodium carboxymethyl cellulose, sorbitol, or dextran. Optionally, the suspension may also contain suitable stabilizers or agents which increase the solubility of the compounds to allow for the preparation of highly concentrated solutions. Alternatively, the active ingredient may be in powder form for constitution with a suitable vehicle, *e.g.*, sterile pyrogen-free water, before use.

The compounds may also be formulated in rectal compositions such as suppositories or retention enemas, *e.g.*, containing conventional suppository bases such as cocoa butter or other glycerides. In addition to the formulations described previously, the compounds may also be formulated as a depot preparation. Such long acting formulations may be administered by implantation (for example subcutaneously or intramuscularly) or by intramuscular injection. Thus, for example, the compounds may be formulated with suitable polymeric or hydrophobic materials (for example as an emulsion in an acceptable oil) or ion exchange resins, or as sparingly soluble derivatives, for example, as a sparingly soluble salt.

A pharmaceutical carrier for the hydrophobic compounds of the invention is a co-solvent system comprising benzyl alcohol, a nonpolar surfactant, a water-miscible organic polymer, and an aqueous phase. The co-solvent system may be the VPD co-solvent system. VPD is a solution of 3% w/v benzyl alcohol, 8% w/v of the nonpolar surfactant polysorbate 80, and 65% w/v polyethylene glycol 300, made up to volume in absolute ethanol. The VPD co-solvent system (VPD:5W) consists of VPD diluted 1:1 with a 5% dextrose in water solution. This co-solvent system dissolves hydrophobic compounds well, and itself produces low toxicity upon systemic administration. Naturally, the proportions of a co-solvent system may be varied considerably without destroying its solubility and toxicity characteristics. Furthermore, the identity of the co-solvent components may be varied: for example, other low-toxicity nonpolar surfactants may be used instead of polysorbate 80; the fraction size of polyethylene glycol may be varied; other biocompatible polymers may replace polyethylene glycol, *e.g.* polyvinyl pyrrolidone; and other

sugars or polysaccharides may substitute for dextrose. Alternatively, other delivery systems for hydrophobic pharmaceutical compounds may be employed. Liposomes and emulsions are well known examples of delivery vehicles or carriers for hydrophobic drugs. Certain organic solvents such as dimethylsulfoxide also may be employed, although usually at the cost of greater toxicity. Additionally, the compounds may be delivered using a sustained-release system, such as semipermeable matrices of solid hydrophobic polymers containing the therapeutic agent. Various types of sustained-release materials have been established and are well known by those skilled in the art. Sustained-release capsules may, depending on their chemical nature, release the compounds for a few weeks up to over 100 days. Depending on the chemical nature and the biological stability of the therapeutic reagent, additional strategies for protein or other active ingredient stabilization may be employed.

The pharmaceutical compositions also may comprise suitable solid or gel phase carriers or excipients. Examples of such carriers or excipients include but are not limited to calcium carbonate, calcium phosphate, various sugars, starches, cellulose derivatives, gelatin, and polymers such as polyethylene glycols. Many of the active ingredients of the invention may be provided as salts with pharmaceutically compatible counter ions. Such pharmaceutically acceptable base addition salts are those salts which retain the biological effectiveness and properties of the free acids and which are obtained by reaction with inorganic or organic bases such as sodium hydroxide, magnesium hydroxide, ammonia, trialkylamine, dialkylamine, monoalkylamine, dibasic amino acids, sodium acetate, potassium benzoate, triethanol amine and the like.

The pharmaceutical composition of the invention may be in the form of a complex of the protein(s) or other active ingredient(s) of present invention along with protein or peptide antigens. The protein and/or peptide antigen will deliver a stimulatory signal to both B and T lymphocytes. B lymphocytes will respond to antigen through their surface immunoglobulin receptor. T lymphocytes will respond to antigen through the T cell receptor (TCR) following presentation of the antigen by MHC proteins. MHC and structurally related proteins including those encoded by class I and class II MHC genes on host cells will serve to present the peptide antigen(s) to T lymphocytes. The antigen components could also be supplied as purified MHC-peptide complexes alone or with co-stimulatory molecules that can directly signal T cells. Alternatively antibodies able to bind surface immunoglobulin and other molecules on B cells as well as antibodies able to bind the TCR and other molecules on T cells can be combined with the pharmaceutical composition of the invention.

The pharmaceutical composition of the invention may be in the form of a liposome in which protein of the present invention is combined, in addition to other pharmaceutically

acceptable carriers, with amphipathic agents such as lipids which exist in aggregated form as micelles, insoluble monolayers, liquid crystals, or lamellar layers in aqueous solution. Suitable lipids for liposomal formulation include, without limitation, monoglycerides, diglycerides, sulfatides, lysolecithins, phospholipids, saponin, bile acids, and the like. Preparation of such liposomal formulations is within the level of skill in the art, as disclosed, for example, in U.S. Patent Nos. 4,235,871; 4,501,728; 4,837,028; and 4,737,323, all of which are incorporated herein by reference.

The amount of protein or other active ingredient of the present invention in the pharmaceutical composition of the present invention will depend upon the nature and severity of the condition being treated, and on the nature of prior treatments which the patient has undergone. Ultimately, the attending physician will decide the amount of protein or other active ingredient of the present invention with which to treat each individual patient. Initially, the attending physician will administer low doses of protein or other active ingredient of the present invention and observe the patient's response. Larger doses of protein or other active ingredient of the present invention may be administered until the optimal therapeutic effect is obtained for the patient, and at that point the dosage is not increased further. It is contemplated that the various pharmaceutical compositions used to practice the method of the present invention should contain about 0.01 μg to about 100 mg (preferably about 0.1 μg to about 10 mg, more preferably about 0.1 μg to about 1 mg) of protein or other active ingredient of the present invention per kg body weight. For compositions of the present invention which are useful for bone, cartilage, tendon or ligament regeneration, the therapeutic method includes administering the composition topically, systematically, or locally as an implant or device. When administered, the therapeutic composition for use in this invention is, of course, in a pyrogen-free, physiologically acceptable form. Further, the composition may desirably be encapsulated or injected in a viscous form for delivery to the site of bone, cartilage or tissue damage. Topical administration may be suitable for wound healing and tissue repair. Therapeutically useful agents other than a protein or other active ingredient of the invention which may also optionally be included in the composition as described above, may alternatively or additionally, be administered simultaneously or sequentially with the composition in the methods of the invention. Preferably for bone and/or cartilage formation, the composition would include a matrix capable of delivering the protein-containing or other active ingredient-containing composition to the site of bone and/or cartilage damage, providing a structure for the developing bone and cartilage and optimally capable of being resorbed into the body. Such matrices may be formed of materials presently in use for other implanted medical applications.

The choice of matrix material is based on biocompatibility, biodegradability, mechanical properties, cosmetic appearance and interface properties. The particular application of the compositions will define the appropriate formulation. Potential matrices for the compositions may be biodegradable and chemically defined calcium sulfate, tricalcium phosphate, hydroxyapatite, polylactic acid, polyglycolic acid and polyanhydrides. Other potential materials are biodegradable and biologically well-defined, such as bone or dermal collagen. Further matrices are comprised of pure proteins or extracellular matrix components. Other potential matrices are nonbiodegradable and chemically defined, such as sintered hydroxyapatite, bioglass, aluminates, or other ceramics. Matrices may be comprised of combinations of any of the above mentioned types of material, such as polylactic acid and hydroxyapatite or collagen and tricalcium phosphate. The bioceramics may be altered in composition, such as in calcium-aluminate-phosphate and processing to alter pore size, particle size, particle shape, and biodegradability. Presently preferred is a 50:50 (mole weight) copolymer of lactic acid and glycolic acid in the form of porous particles having diameters ranging from 150 to 800 microns. In some applications, it will be useful to utilize a sequestering agent, such as carboxymethyl cellulose or autologous blood clot, to prevent the protein compositions from disassociating from the matrix.

A preferred family of sequestering agents is cellulosic materials such as alkylcelluloses (including hydroxyalkylcelluloses), including methylcellulose, ethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose, hydroxypropyl-methylcellulose, and carboxymethylcellulose, the most preferred being cationic salts of carboxymethylcellulose (CMC). Other preferred sequestering agents include hyaluronic acid, sodium alginate, poly(ethylene glycol), polyoxyethylene oxide, carboxyvinyl polymer and poly(vinyl alcohol). The amount of sequestering agent useful herein is 0.5-20 wt %, preferably 1-10 wt % based on total formulation weight, which represents the amount necessary to prevent desorption of the protein from the polymer matrix and to provide appropriate handling of the composition, yet not so much that the progenitor cells are prevented from infiltrating the matrix, thereby providing the protein the opportunity to assist the osteogenic activity of the progenitor cells. In further compositions, proteins or other active ingredients of the invention may be combined with other agents beneficial to the treatment of the bone and/or cartilage defect, wound, or tissue in question. These agents include various growth factors such as epidermal growth factor (EGF), platelet derived growth factor (PDGF), transforming growth factors (TGF-α and TGF-β), and insulin-like growth factor (IGF).

The therapeutic compositions are also presently valuable for veterinary applications. Particularly domestic animals and thoroughbred horses, in addition to humans, are desired

patients for such treatment with proteins or other active ingredients of the present invention. The dosage regimen of a protein-containing pharmaceutical composition to be used in tissue regeneration will be determined by the attending physician considering various factors which modify the action of the proteins, *e.g.*, amount of tissue weight desired to be formed, the site of damage, the condition of the damaged tissue, the size of a wound, type of damaged tissue (*e.g.*, bone), the patient's age, sex, and diet, the severity of any infection, time of administration and other clinical factors. The dosage may vary with the type of matrix used in the reconstitution and with inclusion of other proteins in the pharmaceutical composition. For example, the addition of other known growth factors, such as IGF I (insulin like growth factor I), to the final composition, may also effect the dosage. Progress can be monitored by periodic assessment of tissue/bone growth and/or repair, for example, X-rays, histomorphometric determinations and tetracycline labeling.

Polynucleotides of the present invention can also be used for gene therapy. Such polynucleotides can be introduced either in vivo or ex vivo into cells for expression in a mammalian subject. Polynucleotides of the invention may also be administered by other known methods for introduction of nucleic acid into a cell or organism (including, without limitation, in the form of viral vectors or naked DNA). Cells may also be cultured ex vivo in the presence of proteins of the present invention in order to proliferate or to produce a desired effect on or activity in such cells. Treated cells can then be introduced in vivo for therapeutic purposes.

4.12.3 EFFECTIVE DOSAGE

Pharmaceutical compositions suitable for use in the present invention include compositions wherein the active ingredients are contained in an effective amount to achieve its intended purpose. More specifically, a therapeutically effective amount means an amount effective to prevent development of or to alleviate the existing symptoms of the subject being treated. Determination of the effective amount is well within the capability of those skilled in the art, especially in light of the detailed disclosure provided herein. For any compound used in the method of the invention, the therapeutically effective dose can be estimated initially from appropriate in vitro assays. For example, a dose can be formulated in animal models to achieve a circulating concentration range that can be used to more accurately determine useful doses in humans. For example, a dose can be formulated in animal models to achieve a circulating concentration range that includes the IC_{50} as determined in cell culture (*i.e.*, the concentration of the test compound which achieves a half-maximal inhibition of the protein's biological activity). Such information can be used to more accurately determine useful doses in humans.

A therapeutically effective dose refers to that amount of the compound that results in amelioration of symptoms or a prolongation of survival in a patient. Toxicity and therapeutic efficacy of such compounds can be determined by standard pharmaceutical procedures in cell cultures or experimental animals, *e.g.*, for determining the LD_{50} (the dose lethal to 50% of the population) and the ED_{50} (the dose therapeutically effective in 50% of the population). The dose ratio between toxic and therapeutic effects is the therapeutic index and it can be expressed as the ratio between LD_{50} and ED_{50}. Compounds which exhibit high therapeutic indices are preferred. The data obtained from these cell culture assays and animal studies can be used in formulating a range of dosage for use in human. The dosage of such compounds lies preferably within a range of circulating concentrations that include the ED_{50} with little or no toxicity. The dosage may vary within this range depending upon the dosage form employed and the route of administration utilized. The exact formulation, route of administration and dosage can be chosen by the individual physician in view of the patient's condition. See, *e.g.*, Fingl et al., 1975, in "The Pharmacological Basis of Therapeutics", Ch. 1 p.1. Dosage amount and interval may be adjusted individually to provide plasma levels of the active moiety which are sufficient to maintain the desired effects, or minimal effective concentration (MEC). The MEC will vary for each compound but can be estimated from *in vitro* data. Dosages necessary to achieve the MEC will depend on individual characteristics and route of administration. However, HPLC assays or bioassays can be used to determine plasma concentrations.

Dosage intervals can also be determined using MEC value. Compounds should be administered using a regimen which maintains plasma levels above the MEC for 10-90% of the time, preferably between 30-90% and most preferably between 50-90%. In cases of local administration or selective uptake, the effective local concentration of the drug may not be related to plasma concentration.

An exemplary dosage regimen for polypeptides or other compositions of the invention will be in the range of about 0.01 μg/kg to 100 mg/kg of body weight daily, with the preferred dose being about 0.1 μg/kg to 25 mg/kg of patient body weight daily, varying in adults and children. Dosing may be once daily, or equivalent doses may be delivered at longer or shorter intervals.

The amount of composition administered will, of course, be dependent on the subject being treated, on the subject's age and weight, the severity of the affliction, the manner of administration and the judgment of the prescribing physician.

4.12.4 PACKAGING

The compositions may, if desired, be presented in a pack or dispenser device which may contain one or more unit dosage forms containing the active ingredient. The pack may, for example, comprise metal or plastic foil, such as a blister pack. The pack or dispenser device may be accompanied by instructions for administration. Compositions comprising a compound of the invention formulated in a compatible pharmaceutical carrier may also be prepared, placed in an appropriate container, and labeled for treatment of an indicated condition.

4.13 ANTIBODIES

Also included in the invention are antibodies to proteins, or fragments of proteins of the invention. The term "antibody" as used herein refers to immunoglobulin molecules and immunologically active portions of immunoglobulin (Ig) molecules, *i.e.*, molecules that contain an antigen binding site that specifically binds (immunoreacts with) an antigen. Such antibodies include, but are not limited to, polyclonal, monoclonal, chimeric, single chain, F_{ab}, $F_{ab'}$ and $F_{(ab')2}$ fragments, and an F_{ab} expression library. In general, an antibody molecule obtained from humans relates to any of the classes IgG, IgM, IgA, IgE and IgD, which differ from one another by the nature of the heavy chain present in the molecule. Certain classes have subclasses as well, such as IgG_1, IgG_2, and others. Furthermore, in humans, the light chain may be a kappa chain or a lambda chain. Reference herein to antibodies includes a reference to all such classes, subclasses and types of human antibody species.

An isolated related protein of the invention may be intended to serve as an antigen, or a portion or fragment thereof, and additionally can be used as an immunogen to generate antibodies that immunospecifically bind the antigen, using standard techniques for polyclonal and monoclonal antibody preparation. The full-length protein can be used or, alternatively, the invention provides antigenic peptide fragments of the antigen for use as immunogens. An antigenic peptide fragment comprises at least 6 amino acid residues of the amino acid sequence of the full length protein, (for example the amino acid sequence shown in SEQ ID NO: 1010), and encompasses an epitope thereof such that an antibody raised against the peptide forms a specific immune complex with the full length protein or with any fragment that contains the epitope. Preferably, the antigenic peptide comprises at least 10 amino acid residues, or at least 15 amino acid residues, or at least 20 amino acid residues, or at least 30 amino acid residues. Preferred epitopes encompassed by the antigenic peptide are regions of the protein that are located on its surface; commonly these are hydrophilic regions.

In certain embodiments of the invention, at least one epitope encompassed by the antigenic peptide is a region of -related protein that is located on the surface of the protein, *e.g.*, a hydrophilic region. A hydrophobicity analysis of the human related protein sequence will

indicate which regions of a related protein are particularly hydrophilic and, therefore, are likely to encode surface residues useful for targeting antibody production. As a means for targeting antibody production, hydropathy plots showing regions of hydrophilicity and hydrophobicity may be generated by any method well known in the art, including, for example, the Kyte Doolittle or the Hopp Woods methods, either with or without Fourier transformation. See, *e.g.*, Hopp and Woods, 1981, *Proc. Nat. Acad. Sci. USA* 78: 3824-3828; Kyte and Doolittle 1982, *J. Mol. Biol.* 157: 105-142, each of which is incorporated herein by reference in its entirety. Antibodies that are specific for one or more domains within an antigenic protein, or derivatives, fragments, analogs or homologs thereof, are also provided herein.

A protein of the invention, or a derivative, fragment, analog, homolog or ortholog thereof, may be utilized as an immunogen in the generation of antibodies that immunospecifically bind these protein components.

Various procedures known within the art may be used for the production of polyclonal or monoclonal antibodies directed against a protein of the invention, or against derivatives, fragments, analogs homologs or orthologs thereof (see, for example, Antibodies: A Laboratory Manual, Harlow E, and Lane D, 1988, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, incorporated herein by reference). Some of these antibodies are discussed below.

5.13.1 Polyclonal Antibodies

For the production of polyclonal antibodies, various suitable host animals (*e.g.*, rabbit, goat, mouse or other mammal) may be immunized by one or more injections with the native protein, a synthetic variant thereof, or a derivative of the foregoing. An appropriate immunogenic preparation can contain, for example, the naturally occurring immunogenic protein, a chemically synthesized polypeptide representing the immunogenic protein, or a recombinantly expressed immunogenic protein. Furthermore, the protein may be conjugated to a second protein known to be immunogenic in the mammal being immunized. Examples of such immunogenic proteins include but are not limited to keyhole limpet hemocyanin, serum albumin, bovine thyroglobulin, and soybean trypsin inhibitor. The preparation can further include an adjuvant. Various adjuvants used to increase the immunological response include, but are not limited to, Freund's (complete and incomplete), mineral gels (*e.g.*, aluminum hydroxide), surface active substances (*e.g.*, lysolecithin, pluronic polyols, polyanions, peptides, oil emulsions, dinitrophenol, etc.), adjuvants usable in humans such as Bacille Calmette-Guerin and Corynebacterium parvum, or similar immunostimulatory agents. Additional examples of adjuvants which can be employed include MPL-TDM adjuvant (monophosphoryl Lipid A, synthetic trehalose dicorynomycolate).

The polyclonal antibody molecules directed against the immunogenic protein can be isolated from the mammal (*e.g.*, from the blood) and further purified by well known techniques, such as affinity chromatography using protein A or protein G, which provide primarily the IgG fraction of immune serum. Subsequently, or alternatively, the specific antigen which is the target of the immunoglobulin sought, or an epitope thereof, may be immobilized on a column to purify the immune specific antibody by immunoaffinity chromatography. Purification of immunoglobulins is discussed, for example, by D. Wilkinson (The Scientist, published by The Scientist, Inc., Philadelphia PA, Vol. 14, No. 8 (April 17, 2000), pp. 25-28).

5.13.2 Monoclonal Antibodies

The term "monoclonal antibody" (MAb) or "monoclonal antibody composition", as used herein, refers to a population of antibody molecules that contain only one molecular species of antibody molecule consisting of a unique light chain gene product and a unique heavy chain gene product. In particular, the complementarity determining regions (CDRs) of the monoclonal antibody are identical in all the molecules of the population. MAbs thus contain an antigen binding site capable of immunoreacting with a particular epitope of the antigen characterized by a unique binding affinity for it.

Monoclonal antibodies can be prepared using hybridoma methods, such as those described by Kohler and Milstein, Nature, 256:495 (1975). In a hybridoma method, a mouse, hamster, or other appropriate host animal, is typically immunized with an immunizing agent to elicit lymphocytes that produce or are capable of producing antibodies that will specifically bind to the immunizing agent. Alternatively, the lymphocytes can be immunized in vitro.

The immunizing agent will typically include the protein antigen, a fragment thereof or a fusion protein thereof. Generally, either peripheral blood lymphocytes are used if cells of human origin are desired, or spleen cells or lymph node cells are used if non-human mammalian sources are desired. The lymphocytes are then fused with an immortalized cell line using a suitable fusing agent, such as polyethylene glycol, to form a hybridoma cell (Goding, Monoclonal Antibodies: Principles and Practice, Academic Press, (1986) pp. 59-103). Immortalized cell lines are usually transformed mammalian cells, particularly myeloma cells of rodent, bovine and human origin. Usually, rat or mouse myeloma cell lines are employed. The hybridoma cells can be cultured in a suitable culture medium that preferably contains one or more substances that inhibit the growth or survival of the unfused, immortalized cells. For example, if the parental cells lack the enzyme hypoxanthine guanine phosphoribosyl transferase (HGPRT or HPRT), the culture medium for the hybridomas typically will include hypoxanthine, aminopterin, and thymidine ("HAT medium"), which substances prevent the growth of HGPRT-deficient cells.

Preferred immortalized cell lines are those that fuse efficiently, support stable high level expression of antibody by the selected antibody-producing cells, and are sensitive to a medium such as HAT medium. More preferred immortalized cell lines are murine myeloma lines, which can be obtained, for instance, from the Salk Institute Cell Distribution Center, San Diego, California and the American Type Culture Collection, Manassas, Virginia. Human myeloma and mouse-human heteromyeloma cell lines also have been described for the production of human monoclonal antibodies (Kozbor, J. Immunol., 133:3001 (1984); Brodeur et al., Monoclonal Antibody Production Techniques and Applications, Marcel Dekker, Inc., New York, (1987) pp. 51-63).

The culture medium in which the hybridoma cells are cultured can then be assayed for the presence of monoclonal antibodies directed against the antigen. Preferably, the binding specificity of monoclonal antibodies produced by the hybridoma cells is determined by immunoprecipitation or by an in vitro binding assay, such as radioimmunoassay (RIA) or enzyme-linked immunoabsorbent assay (ELISA). Such techniques and assays are known in the art. The binding affinity of the monoclonal antibody can, for example, be determined by the Scatchard analysis of Munson and Pollard, Anal. Biochem., 107:220 (1980). Preferably, antibodies having a high degree of specificity and a high binding affinity for the target antigen are isolated.

After the desired hybridoma cells are identified, the clones can be subcloned by limiting dilution procedures and grown by standard methods. Suitable culture media for this purpose include, for example, Dulbecco's Modified Eagle's Medium and RPMI-1640 medium. Alternatively, the hybridoma cells can be grown in vivo as ascites in a mammal.

The monoclonal antibodies secreted by the subclones can be isolated or purified from the culture medium or ascites fluid by conventional immunoglobulin purification procedures such as, for example, protein A-Sepharose, hydroxylapatite chromatography, gel electrophoresis, dialysis, or affinity chromatography.

The monoclonal antibodies can also be made by recombinant DNA methods, such as those described in U.S. Patent No. 4,816,567. DNA encoding the monoclonal antibodies of the invention can be readily isolated and sequenced using conventional procedures (*e.g.*, by using oligonucleotide probes that are capable of binding specifically to genes encoding the heavy and light chains of murine antibodies). The hybridoma cells of the invention serve as a preferred source of such DNA. Once isolated, the DNA can be placed into expression vectors, which are then transfected into host cells such as simian COS cells, Chinese hamster ovary (CHO) cells, or myeloma cells that do not otherwise produce immunoglobulin protein, to obtain the synthesis of monoclonal antibodies in the recombinant host cells. The DNA also can be modified, for

example, by substituting the coding sequence for human heavy and light chain constant domains in place of the homologous murine sequences (U.S. Patent No. 4,816,567; Morrison, Nature 368, 812-13 (1994)) or by covalently joining to the immunoglobulin coding sequence all or part of the coding sequence for a non-immunoglobulin polypeptide. Such a non-immunoglobulin polypeptide can be substituted for the constant domains of an antibody of the invention, or can be substituted for the variable domains of one antigen-combining site of an antibody of the invention to create a chimeric bivalent antibody.

5.13.2 Humanized Antibodies

The antibodies directed against the protein antigens of the invention can further comprise humanized antibodies or human antibodies. These antibodies are suitable for administration to humans without engendering an immune response by the human against the administered immunoglobulin. Humanized forms of antibodies are chimeric immunoglobulins, immunoglobulin chains or fragments thereof (such as Fv, Fab, Fab', $F(ab')_2$ or other antigen-binding subsequences of antibodies) that are principally comprised of the sequence of a human immunoglobulin, and contain minimal sequence derived from a non-human immunoglobulin. Humanization can be performed following the method of Winter and co-workers (Jones et al., Nature, 321:522-525 (1986); Riechmann et al., Nature, 332:323-327 (1988); Verhoeyen et al., Science, 239:1534-1536 (1988)), by substituting rodent CDRs or CDR sequences for the corresponding sequences of a human antibody. (See also U.S. Patent No. 5,225,539.) In some instances, Fv framework residues of the human immunoglobulin are replaced by corresponding non-human residues. Humanized antibodies can also comprise residues which are found neither in the recipient antibody nor in the imported CDR or framework sequences. In general, the humanized antibody will comprise substantially all of at least one, and typically two, variable domains, in which all or substantially all of the CDR regions correspond to those of a non-human immunoglobulin and all or substantially all of the framework regions are those of a human immunoglobulin consensus sequence. The humanized antibody optimally also will comprise at least a portion of an immunoglobulin constant region (Fc), typically that of a human immunoglobulin (Jones et al., 1986; Riechmann et al., 1988; and Presta, Curr. Op. Struct. Biol., 2:593-596 (1992)).

5.13.3 Human Antibodies

Fully human antibodies relate to antibody molecules in which essentially the entire sequences of both the light chain and the heavy chain, including the CDRs, arise from human genes. Such antibodies are termed "human antibodies", or "fully human antibodies" herein.

Human monoclonal antibodies can be prepared by the trioma technique; the human B-cell hybridoma technique (see Kozbor, et al., 1983 Immunol Today 4: 72) and the EBV hybridoma technique to produce human monoclonal antibodies (see Cole, et al., 1985 In: MONOCLONAL ANTIBODIES AND CANCER THERAPY, Alan R. Liss, Inc., pp. 77-96). Human monoclonal antibodies may be utilized in the practice of the present invention and may be produced by using human hybridomas (see Cote, et al., 1983. Proc Natl Acad Sci USA 80: 2026-2030) or by transforming human B-cells with Epstein Barr Virus in vitro (see Cole, et al., 1985 In: MONOCLONAL ANTIBODIES AND CANCER THERAPY, Alan R. Liss, Inc., pp. 77-96).

In addition, human antibodies can also be produced using additional techniques, including phage display libraries (Hoogenboom and Winter, J. Mol. Biol., 227:381 (1991); Marks et al., J. Mol. Biol., 222:581 (1991)). Similarly, human antibodies can be made by introducing human immunoglobulin loci into transgenic animals, *e.g.*, mice in which the endogenous immunoglobulin genes have been partially or completely inactivated. Upon challenge, human antibody production is observed, which closely resembles that seen in humans in all respects, including gene rearrangement, assembly, and antibody repertoire. This approach is described, for example, in U.S. Patent Nos. 5,545,807; 5,545,806; 5,569,825; 5,625,126; 5,633,425; 5,661,016, and in Marks et al. (Bio/Technology 10, 779-783 (1992)); Lonberg et al. (Nature 368 856-859 (1994)); Morrison (Nature 368, 812-13 (1994)); Fishwild et al,(Nature Biotechnology 14, 845-51 (1996)); Neuberger (Nature Biotechnology 14, 826 (1996)); and Lonberg and Huszar (Intern. Rev. Immunol. 13 65-93 (1995)).

Human antibodies may additionally be produced using transgenic nonhuman animals which are modified so as to produce fully human antibodies rather than the animal's endogenous antibodies in response to challenge by an antigen. (See PCT publication WO94/02602). The endogenous genes encoding the heavy and light immunoglobulin chains in the nonhuman host have been incapacitated, and active loci encoding human heavy and light chain immunoglobulins are inserted into the host's genome. The human genes are incorporated, for example, using yeast artificial chromosomes containing the requisite human DNA segments. An animal which provides all the desired modifications is then obtained as progeny by crossbreeding intermediate transgenic animals containing fewer than the full complement of the modifications. The preferred embodiment of such a nonhuman animal is a mouse, and is termed the Xenomouse™ as disclosed in PCT publications WO 96/33735 and WO 96/34096. This animal produces B cells which secrete fully human immunoglobulins. The antibodies can be obtained directly from the animal after immunization with an immunogen of interest, as, for example, a preparation of a polyclonal antibody, or alternatively from immortalized B cells derived from the animal, such as hybridomas producing monoclonal antibodies. Additionally, the genes encoding the

immunoglobulins with human variable regions can be recovered and expressed to obtain the antibodies directly, or can be further modified to obtain analogs of antibodies such as, for example, single chain Fv molecules.

An example of a method of producing a nonhuman host, exemplified as a mouse, lacking expression of an endogenous immunoglobulin heavy chain is disclosed in U.S. Patent No. 5,939,598. It can be obtained by a method including deleting the J segment genes from at least one endogenous heavy chain locus in an embryonic stem cell to prevent rearrangement of the locus and to prevent formation of a transcript of a rearranged immunoglobulin heavy chain locus, the deletion being effected by a targeting vector containing a gene encoding a selectable marker; and producing from the embryonic stem cell a transgenic mouse whose somatic and germ cells contain the gene encoding the selectable marker.

A method for producing an antibody of interest, such as a human antibody, is disclosed in U.S. Patent No. 5,916,771. It includes introducing an expression vector that contains a nucleotide sequence encoding a heavy chain into one mammalian host cell in culture, introducing an expression vector containing a nucleotide sequence encoding a light chain into another mammalian host cell, and fusing the two cells to form a hybrid cell. The hybrid cell expresses an antibody containing the heavy chain and the light chain.

In a further improvement on this procedure, a method for identifying a clinically relevant epitope on an immunogen, and a correlative method for selecting an antibody that binds immunospecifically to the relevant epitope with high affinity, are disclosed in PCT publication WO 99/53049.

5.13.4 F_{ab} Fragments and Single Chain Antibodies

According to the invention, techniques can be adapted for the production of single-chain antibodies specific to an antigenic protein of the invention (see *e.g.*, U.S. Patent No. 4,946,778). In addition, methods can be adapted for the construction of F_{ab} expression libraries (see *e.g.*, Huse, et al., 1989 Science 246: 1275-1281) to allow rapid and effective identification of monoclonal F_{ab} fragments with the desired specificity for a protein or derivatives, fragments, analogs or homologs thereof. Antibody fragments that contain the idiotypes to a protein antigen may be produced by techniques known in the art including, but not limited to: (i) an $F_{(ab')2}$ fragment produced by pepsin digestion of an antibody molecule; (ii) an F_{ab} fragment generated by reducing the disulfide bridges of an $F_{(ab')2}$ fragment; (iii) an F_{ab} fragment generated by the treatment of the antibody molecule with papain and a reducing agent and (iv) F_v fragments.

5.13.5 Bispecific Antibodies

Bispecific antibodies are monoclonal, preferably human or humanized, antibodies that have binding specificities for at least two different antigens. In the present case, one of the binding specificities is for an antigenic protein of the invention. The second binding target is any other antigen, and advantageously is a cell-surface protein or receptor or receptor subunit.

Methods for making bispecific antibodies are known in the art. Traditionally, the recombinant production of bispecific antibodies is based on the co-expression of two immunoglobulin heavy-chain/light-chain pairs, where the two heavy chains have different specificities (Milstein and Cuello, Nature, 305:537-539 (1983)). Because of the random assortment of immunoglobulin heavy and light chains, these hybridomas (quadromas) produce a potential mixture of ten different antibody molecules, of which only one has the correct bispecific structure. The purification of the correct molecule is usually accomplished by affinity chromatography steps. Similar procedures are disclosed in WO 93/08829, published 13 May 1993, and in Traunecker *et al.*, 1991 *EMBO J.*, 10:3655-3659.

Antibody variable domains with the desired binding specificities (antibody-antigen combining sites) can be fused to immunoglobulin constant domain sequences. The fusion preferably is with an immunoglobulin heavy-chain constant domain, comprising at least part of the hinge, CH2, and CH3 regions. It is preferred to have the first heavy-chain constant region (CH1) containing the site necessary for light-chain binding present in at least one of the fusions. DNAs encoding the immunoglobulin heavy-chain fusions and, if desired, the immunoglobulin light chain, are inserted into separate expression vectors, and are co-transfected into a suitable host organism. For further details of generating bispecific antibodies see, for example, Suresh et al., Methods in Enzymology, 121:210 (1986).

According to another approach described in WO 96/27011, the interface between a pair of antibody molecules can be engineered to maximize the percentage of heterodimers which are recovered from recombinant cell culture. The preferred interface comprises at least a part of the CH3 region of an antibody constant domain. In this method, one or more small amino acid side chains from the interface of the first antibody molecule are replaced with larger side chains (*e.g.* tyrosine or tryptophan). Compensatory "cavities" of identical or similar size to the large side chain(s) are created on the interface of the second antibody molecule by replacing large amino acid side chains with smaller ones (*e.g.* alanine or threonine). This provides a mechanism for increasing the yield of the heterodimer over other unwanted end-products such as homodimers.

Bispecific antibodies can be prepared as full length antibodies or antibody fragments (*e.g.* $F(ab')_2$ bispecific antibodies). Techniques for generating bispecific antibodies from antibody fragments have been described in the literature. For example, bispecific antibodies can be prepared using chemical linkage. Brennan et al., Science 229:81 (1985) describe a procedure

wherein intact antibodies are proteolytically cleaved to generate $F(ab')_2$ fragments. These fragments are reduced in the presence of the dithiol complexing agent sodium arsenite to stabilize vicinal dithiols and prevent intermolecular disulfide formation. The Fab' fragments generated are then converted to thionitrobenzoate (TNB) derivatives. One of the Fab'-TNB derivatives is then reconverted to the Fab'-thiol by reduction with mercaptoethylamine and is mixed with an equimolar amount of the other Fab'-TNB derivative to form the bispecific antibody. The bispecific antibodies produced can be used as agents for the selective immobilization of enzymes.

Additionally, Fab' fragments can be directly recovered from E. coli and chemically coupled to form bispecific antibodies. Shalaby et al., J. Exp. Med. 175:217-225 (1992) describe the production of a fully humanized bispecific antibody $F(ab')_2$ molecule. Each Fab' fragment was separately secreted from E. coli and subjected to directed chemical coupling in vitro to form the bispecific antibody. The bispecific antibody thus formed was able to bind to cells overexpressing the ErbB2 receptor and normal human T cells, as well as trigger the lytic activity of human cytotoxic lymphocytes against human breast tumor targets.

Various techniques for making and isolating bispecific antibody fragments directly from recombinant cell culture have also been described. For example, bispecific antibodies have been produced using leucine zippers. Kostelny et al., J. Immunol. 148(5):1547-1553 (1992). The leucine zipper peptides from the Fos and Jun proteins were linked to the Fab' portions of two different antibodies by gene fusion. The antibody homodimers were reduced at the hinge region to form monomers and then re-oxidized to form the antibody heterodimers. This method can also be utilized for the production of antibody homodimers. The "diabody" technology described by Hollinger et al., Proc. Natl. Acad. Sci. USA 90:6444-6448 (1993) has provided an alternative mechanism for making bispecific antibody fragments. The fragments comprise a heavy-chain variable domain (V_H) connected to a light-chain variable domain (V_L) by a linker which is too short to allow pairing between the two domains on the same chain. Accordingly, the V_H and V_L domains of one fragment are forced to pair with the complementary V_L and V_H domains of another fragment, thereby forming two antigen-binding sites. Another strategy for making bispecific antibody fragments by the use of single-chain Fv (sFv) dimers has also been reported. See, Gruber et al., J. Immunol. 152:5368 (1994).

Antibodies with more than two valencies are contemplated. For example, trispecific antibodies can be prepared. Tutt et al., J. Immunol. 147:60 (1991).

Exemplary bispecific antibodies can bind to two different epitopes, at least one of which originates in the protein antigen of the invention. Alternatively, an anti-antigenic arm of an immunoglobulin molecule can be combined with an arm which binds to a triggering molecule on

a leukocyte such as a T-cell receptor molecule (*e.g.* CD2, CD3, CD28, or B7), or Fc receptors for IgG (FcγR), such as FcγRI (CD64), FcγRII (CD32) and FcγRIII (CD16) so as to focus cellular defense mechanisms to the cell expressing the particular antigen. Bispecific antibodies can also be used to direct cytotoxic agents to cells which express a particular antigen. These antibodies possess an antigen-binding arm and an arm which binds a cytotoxic agent or a radionuclide chelator, such as EOTUBE, DPTA, DOTA, or TETA. Another bispecific antibody of interest binds the protein antigen described herein and further binds tissue factor (TF).

5.13.6 Heteroconjugate Antibodies

Heteroconjugate antibodies are also within the scope of the present invention. Heteroconjugate antibodies are composed of two covalently joined antibodies. Such antibodies have, for example, been proposed to target immune system cells to unwanted cells (U.S. Patent No. 4,676,980), and for treatment of HIV infection (WO 91/00360; WO 92/200373; EP 03089). It is contemplated that the antibodies can be prepared in vitro using known methods in synthetic protein chemistry, including those involving crosslinking agents. For example, immunotoxins can be constructed using a disulfide exchange reaction or by forming a thioether bond. Examples of suitable reagents for this purpose include iminothiolate and methyl-4-mercaptobutyrimidate and those disclosed, for example, in U.S. Patent No. 4,676,980.

5.13.7 Effector Function Engineering

It can be desirable to modify the antibody of the invention with respect to effector function, so as to enhance, *e.g.*, the effectiveness of the antibody in treating cancer. For example, cysteine residue(s) can be introduced into the Fc region, thereby allowing interchain disulfide bond formation in this region. The homodimeric antibody thus generated can have improved internalization capability and/or increased complement-mediated cell killing and antibody-dependent cellular cytotoxicity (ADCC). See Caron et al., J. Exp Med., 176: 1191-1195 (1992) and Shopes, J. Immunol., 148: 2918-2922 (1992). Homodimeric antibodies with enhanced anti-tumor activity can also be prepared using heterobifunctional cross-linkers as described in Wolff et al. Cancer Research, 53: 2560-2565 (1993). Alternatively, an antibody can be engineered that has dual Fc regions and can thereby have enhanced complement lysis and ADCC capabilities. See Stevenson et al., Anti-Cancer Drug Design, 3: 219-230 (1989).

5.13.8 Immunoconjugates

The invention also pertains to immunoconjugates comprising an antibody conjugated to a cytotoxic agent such as a chemotherapeutic agent, toxin (*e.g.*, an enzymatically active toxin of

bacterial, fungal, plant, or animal origin, or fragments thereof), or a radioactive isotope (*i.e.*, a radioconjugate).

Chemotherapeutic agents useful in the generation of such immunoconjugates have been described above. Enzymatically active toxins and fragments thereof that can be used include diphtheria A chain, nonbinding active fragments of diphtheria toxin, exotoxin A chain (from Pseudomonas aeruginosa), ricin A chain, abrin A chain, modeccin A chain, alpha-sarcin, Aleurites fordii proteins, dianthin proteins, Phytolaca americana proteins (PAPI, PAPII, and PAP-S), momordica charantia inhibitor, curcin, crotin, sapaonaria officinalis inhibitor, gelonin, mitogellin, restrictocin, phenomycin, enomycin, and the tricothecenes. A variety of radionuclides are available for the production of radioconjugated antibodies. Examples include ^{212}Bi, ^{131}I, ^{131}In, ^{90}Y, and ^{186}Re.

Conjugates of the antibody and cytotoxic agent are made using a variety of bifunctional protein-coupling agents such as N-succinimidyl-3-(2-pyridyldithiol) propionate (SPDP), iminothiolane (IT), bifunctional derivatives of imidoesters (such as dimethyl adipimidate HCL), active esters (such as disuccinimidyl suberate), aldehydes (such as glutareldehyde), bis-azido compounds (such as bis (p-azidobenzoyl) hexanediamine), bis-diazonium derivatives (such as bis-(p-diazoniumbenzoyl)-ethylenediamine), diisocyanates (such as tolyene 2,6-diisocyanate), and bis-active fluorine compounds (such as 1,5-difluoro-2,4-dinitrobenzene). For example, a ricin immunotoxin can be prepared as described in Vitetta et al., Science, 238: 1098 (1987). Carbon-14-labeled 1-isothiocyanatobenzyl-3-methyldiethylene triaminepentaacetic acid (MX-DTPA) is an exemplary chelating agent for conjugation of radionucleotide to the antibody. See WO94/11026.

In another embodiment, the antibody can be conjugated to a "receptor" (such streptavidin) for utilization in tumor pretargeting wherein the antibody-receptor conjugate is administered to the patient, followed by removal of unbound conjugate from the circulation using a clearing agent and then administration of a "ligand" (*e.g.*, avidin) that is in turn conjugated to a cytotoxic agent.

4.14 COMPUTER READABLE SEQUENCES

In one application of this embodiment, a nucleotide sequence of the present invention can be recorded on computer readable media. As used herein, "computer readable media" refers to any medium which can be read and accessed directly by a computer. Such media include, but are not limited to: magnetic storage media, such as floppy discs, hard disc storage medium, and magnetic tape; optical storage media such as CD-ROM; electrical storage media such as RAM and ROM; and hybrids of these categories such as magnetic/optical storage media. A skilled

artisan can readily appreciate how any of the presently known computer readable mediums can be used to create a manufacture comprising computer readable medium having recorded thereon a nucleotide sequence of the present invention. As used herein, "recorded" refers to a process for storing information on computer readable medium. A skilled artisan can readily adopt any of the presently known methods for recording information on computer readable medium to generate manufactures comprising the nucleotide sequence information of the present invention.

A variety of data storage structures are available to a skilled artisan for creating a computer readable medium having recorded thereon a nucleotide sequence of the present invention. The choice of the data storage structure will generally be based on the means chosen to access the stored information. In addition, a variety of data processor programs and formats can be used to store the nucleotide sequence information of the present invention on computer readable medium. The sequence information can be represented in a word processing text file, formatted in commercially-available software such as WordPerfect and Microsoft Word, or represented in the form of an ASCII file, stored in a database application, such as DB2, Sybase, Oracle, or the like. A skilled artisan can readily adapt any number of data processor structuring formats (*e.g.* text file or database) in order to obtain computer readable medium having recorded thereon the nucleotide sequence information of the present invention.

By providing any of the nucleotide sequences SEQ ID NO:1-1009 or a representative fragment thereof; or a nucleotide sequence at least 95% identical to any of the nucleotide sequences of SEQ ID NO:1-1009 in computer readable form, a skilled artisan can routinely access the sequence information for a variety of purposes. Computer software is publicly available which allows a skilled artisan to access sequence information provided in a computer readable medium. The examples which follow demonstrate how software which implements the BLAST (Altschul et al., J. Mol. Biol. 215:403-410 (1990)) and BLAZE (Brutlag et al., Comp. Chem. 17:203-207 (1993)) search algorithms on a Sybase system is used to identify open reading frames (ORFs) within a nucleic acid sequence. Such ORFs may be protein encoding fragments and may be useful in producing commercially important proteins such as enzymes used in fermentation reactions and in the production of commercially useful metabolites.

As used herein, "a computer-based system" refers to the hardware means, software means, and data storage means used to analyze the nucleotide sequence information of the present invention. The minimum hardware means of the computer-based systems of the present invention comprises a central processing unit (CPU), input means, output means, and data storage means. A skilled artisan can readily appreciate that any one of the currently available computer-based systems are suitable for use in the present invention. As stated above, the computer-based systems of the present invention comprise a data storage means having stored

therein a nucleotide sequence of the present invention and the necessary hardware means and software means for supporting and implementing a search means. As used herein, "data storage means" refers to memory which can store nucleotide sequence information of the present invention, or a memory access means which can access manufactures having recorded thereon the nucleotide sequence information of the present invention.

As used herein, "search means" refers to one or more programs which are implemented on the computer-based system to compare a target sequence or target structural motif with the sequence information stored within the data storage means. Search means are used to identify fragments or regions of a known sequence which match a particular target sequence or target motif. A variety of known algorithms are disclosed publicly and a variety of commercially available software for conducting search means are and can be used in the computer-based systems of the present invention. Examples of such software includes, but is not limited to, Smith-Waterman, MacPattern (EMBL), BLASTN and BLASTA (NPOLYPEPTIDEIA). A skilled artisan can readily recognize that any one of the available algorithms or implementing software packages for conducting homology searches can be adapted for use in the present computer-based systems. As used herein, a "target sequence" can be any nucleic acid or amino acid sequence of six or more nucleotides or two or more amino acids. A skilled artisan can readily recognize that the longer a target sequence is, the less likely a target sequence will be present as a random occurrence in the database. The most preferred sequence length of a target sequence is from about 10 to 300 amino acids, more preferably from about 30 to 100 nucleotide residues. However, it is well recognized that searches for commercially important fragments, such as sequence fragments involved in gene expression and protein processing, may be of shorter length.

As used herein, "a target structural motif," or "target motif," refers to any rationally selected sequence or combination of sequences in which the sequence(s) are chosen based on a three-dimensional configuration which is formed upon the folding of the target motif. There are a variety of target motifs known in the art. Protein target motifs include, but are not limited to, enzyme active sites and signal sequences. Nucleic acid target motifs include, but are not limited to, promoter sequences, hairpin structures and inducible expression elements (protein binding sequences).

4.15 TRIPLE HELIX FORMATION

In addition, the fragments of the present invention, as broadly described, can be used to control gene expression through triple helix formation or antisense DNA or RNA, both of which methods are based on the binding of a polynucleotide sequence to DNA or RNA.

Polynucleotides suitable for use in these methods are preferably 20 to 40 bases in length and are designed to be complementary to a region of the gene involved in transcription (triple helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al., Science 15241:456 (1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA itself (antisense - Olmno, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as Antisense Inhibitors of Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple helix-formation optimally results in a shut-off of RNA transcription from DNA, while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Both techniques have been demonstrated to be effective in model systems. Information contained in the sequences of the present invention is necessary for the design of an antisense or triple helix oligonucleotide.

4.16 DIAGNOSTIC ASSAYS AND KITS

The present invention further provides methods to identify the presence or expression of one of the ORFs of the present invention, or homolog thereof, in a test sample, using a nucleic acid probe or antibodies of the present invention, optionally conjugated or otherwise associated with a suitable label.

In general, methods for detecting a polynucleotide of the invention can comprise contacting a sample with a compound that binds to and forms a complex with the polynucleotide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polynucleotide of the invention is detected in the sample. Such methods can also comprise contacting a sample under stringent hybridization conditions with nucleic acid primers that anneal to a polynucleotide of the invention under such conditions, and amplifying annealed polynucleotides, so that if a polynucleotide is amplified, a polynucleotide of the invention is detected in the sample.

In general, methods for detecting a polypeptide of the invention can comprise contacting a sample with a compound that binds to and forms a complex with the polypeptide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polypeptide of the invention is detected in the sample.

In detail, such methods comprise incubating a test sample with one or more of the antibodies or one or more of the nucleic acid probes of the present invention and assaying for binding of the nucleic acid probes or antibodies to components within the test sample.

Conditions for incubating a nucleic acid probe or antibody with a test sample vary. Incubation conditions depend on the format employed in the assay, the detection methods employed, and the type and nature of the nucleic acid probe or antibody used in the assay. One skilled in the art will recognize that any one of the commonly available hybridization,

amplification or immunological assay formats can readily be adapted to employ the nucleic acid probes or antibodies of the present invention. Examples of such assays can be found in Chard, T., An Introduction to Radioimmunoassay and Related Techniques, Elsevier Science Publishers, Amsterdam, The Netherlands (1986); Bullock, G.R. et al., Techniques in Immunocytochemistry, Academic Press, Orlando, FL Vol. 1 (1982), Vol. 2 (1983), Vol. 3 (1985); Tijssen, P., Practice and Theory of immunoassays: Laboratory Techniques in Biochemistry and Molecular Biology, Elsevier Science Publishers, Amsterdam, The Netherlands (1985). The test samples of the present invention include cells, protein or membrane extracts of cells, or biological fluids such as sputum, blood, serum, plasma, or urine. The test sample used in the above-described method will vary based on the assay format, nature of the detection method and the tissues, cells or extracts used as the sample to be assayed. Methods for preparing protein extracts or membrane extracts of cells are well known in the art and can be readily be adapted in order to obtain a sample which is compatible with the system utilized.

In another embodiment of the present invention, kits are provided which contain the necessary reagents to carry out the assays of the present invention. Specifically, the invention provides a compartment kit to receive, in close confinement, one or more containers which comprises: (a) a first container comprising one of the probes or antibodies of the present invention; and (b) one or more other containers comprising one or more of the following: wash reagents, reagents capable of detecting presence of a bound probe or antibody.

In detail, a compartment kit includes any kit in which reagents are contained in separate containers. Such containers include small glass containers, plastic containers or strips of plastic or paper. Such containers allows one to efficiently transfer reagents from one compartment to another compartment such that the samples and reagents are not cross-contaminated, and the agents or solutions of each container can be added in a quantitative fashion from one compartment to another. Such containers will include a container which will accept the test sample, a container which contains the antibodies used in the assay, containers which contain wash reagents (such as phosphate buffered saline, Tris-buffers, etc.), and containers which contain the reagents used to detect the bound antibody or probe. Types of detection reagents include labeled nucleic acid probes, labeled secondary antibodies, or in the alternative, if the primary antibody is labeled, the enzymatic, or antibody binding reagents which are capable of reacting with the labeled antibody. One skilled in the art will readily recognize that the disclosed probes and antibodies of the present invention can be readily incorporated into one of the established kit formats which are well known in the art.

4.17 MEDICAL IMAGING

The novel polypeptides and binding partners of the invention are useful in medical imaging of sites expressing the molecules of the invention (*e.g.*, where the polypeptide of the invention is involved in the immune response, for imaging sites of inflammation or infection). See, *e.g.*, Kunkel et al., U.S. Pat. NO. 5,413,778. Such methods involve chemical attachment of a labeling or imaging agent, administration of the labeled polypeptide to a subject in a pharmaceutically acceptable carrier, and imaging the labeled polypeptide *in vivo* at the target site.

4.18 SCREENING ASSAYS

Using the isolated proteins and polynucleotides of the invention, the present invention further provides methods of obtaining and identifying agents which bind to a polypeptide encoded by an ORF corresponding to any of the nucleotide sequences set forth in SEQ ID NO:1-1009, or bind to a specific domain of the polypeptide encoded by the nucleic acid. In detail, said method comprises the steps of:

(a) contacting an agent with an isolated protein encoded by an ORF of the present invention, or nucleic acid of the invention; and

(b) determining whether the agent binds to said protein or said nucleic acid.

In general, therefore, such methods for identifying compounds that bind to a polynucleotide of the invention can comprise contacting a compound with a polynucleotide of the invention for a time sufficient to form a polynucleotide/compound complex, and detecting the complex, so that if a polynucleotide/compound complex is detected, a compound that binds to a polynucleotide of the invention is identified.

Likewise, in general, therefore, such methods for identifying compounds that bind to a polypeptide of the invention can comprise contacting a compound with a polypeptide of the invention for a time sufficient to form a polypeptide/compound complex, and detecting the complex, so that if a polypeptide/compound complex is detected, a compound that binds to a ~~polynucleotide~~ of the invention is identified.

Methods for identifying compounds that bind to a polypeptide of the invention can also comprise contacting a compound with a polypeptide of the invention in a cell for a time sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a receptor gene sequence in the cell, and detecting the complex by detecting reporter gene sequence expression, so that if a polypeptide/compound complex is detected, a compound that binds a polypeptide of the invention is identified.

Compounds identified via such methods can include compounds which modulate the activity of a polypeptide of the invention (that is, increase or decrease its activity, relative to

activity observed in the absence of the compound). Alternatively, compounds identified via such methods can include compounds which modulate the expression of a polynucleotide of the invention (that is, increase or decrease expression relative to expression levels observed in the absence of the compound). Compounds, such as compounds identified via the methods of the invention, can be tested using standard assays well known to those of skill in the art for their ability to modulate activity/expression.

The agents screened in the above assay can be, but are not limited to, peptides, carbohydrates, vitamin derivatives, or other pharmaceutical agents. The agents can be selected and screened at random or rationally selected or designed using protein modeling techniques.

For random screening, agents such as peptides, carbohydrates, pharmaceutical agents and the like are selected at random and are assayed for their ability to bind to the protein encoded by the ORF of the present invention. Alternatively, agents may be rationally selected or designed. As used herein, an agent is said to be "rationally selected or designed" when the agent is chosen based on the configuration of the particular protein. For example, one skilled in the art can readily adapt currently available procedures to generate peptides, pharmaceutical agents and the like, capable of binding to a specific peptide sequence, in order to generate rationally designed antipeptide peptides, for example see Hurby et al., Application of Synthetic Peptides: Antisense Peptides," In Synthetic Peptides, A User's Guide, W.H. Freeman, NY (1992), pp. 289-307, and Kaspczak et al., Biochemistry 28:9230-8 (1989), or pharmaceutical agents, or the like.

In addition to the foregoing, one class of agents of the present invention, as broadly described, can be used to control gene expression through binding to one of the ORFs or EMFs of the present invention. As described above, such agents can be randomly screened or rationally designed/selected. Targeting the ORF or EMF allows a skilled artisan to design sequence specific or element specific agents, modulating the expression of either a single ORF or multiple ORFs which rely on the same EMF for expression control. One class of DNA binding agents are agents which contain base residues which hybridize or form a triple helix formation by binding to DNA or RNA. Such agents can be based on the classic phosphodiester, ribonucleic acid backbone, or can be a variety of sulfhydryl or polymeric derivatives which have base attachment capacity.

Agents suitable for use in these methods preferably contain 20 to 40 bases and are designed to be complementary to a region of the gene involved in transcription (triple helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al., Science 241:456 (1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA itself (antisense - Okano, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as Antisense Inhibitors of Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple helix-formation optimally results in a shut-off of RNA transcription

from DNA, while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Both techniques have been demonstrated to be effective in model systems. Information contained in the sequences of the present invention is necessary for the design of an antisense or triple helix oligonucleotide and other DNA binding agents.

Agents which bind to a protein encoded by one of the ORFs of the present invention can be used as a diagnostic agent. Agents which bind to a protein encoded by one of the ORFs of the present invention can be formulated using known techniques to generate a pharmaceutical composition.

4.19 USE OF NUCLEIC ACIDS AS PROBES

Another aspect of the subject invention is to provide for polypeptide-specific nucleic acid hybridization probes capable of hybridizing with naturally occurring nucleotide sequences. The hybridization probes of the subject invention may be derived from any of the nucleotide sequences SEQ ID NO:1-1009. Because the corresponding gene is only expressed in a limited number of tissues, a hybridization probe derived from of any of the nucleotide sequences SEQ ID NO:1-1009 can be used as an indicator of the presence of RNA of cell type of such a tissue in a sample.

Any suitable hybridization technique can be employed, such as, for example, in situ hybridization. PCR as described in US Patents Nos. 4,683,195 and 4,965,188 provides additional uses for oligonucleotides based upon the nucleotide sequences. Such probes used in PCR may be of recombinant origin, may be chemically synthesized, or a mixture of both. The probe will comprise a discrete nucleotide sequence for the detection of identical sequences or a degenerate pool of possible sequences for identification of closely related genomic sequences.

Other means for producing specific hybridization probes for nucleic acids include the cloning of nucleic acid sequences into vectors for the production of mRNA probes. Such vectors are known in the art and are commercially available and may be used to synthesize RNA probes *in vitro* by means of the addition of the appropriate RNA polymerase as T7 or SP6 RNA polymerase and the appropriate radioactively labeled nucleotides. The nucleotide sequences may be used to construct hybridization probes for mapping their respective genomic sequences. The nucleotide sequence provided herein may be mapped to a chromosome or specific regions of a chromosome using well known genetic and/or chromosomal mapping techniques. These techniques include in situ hybridization, linkage analysis against known chromosomal markers, hybridization screening with libraries or flow-sorted chromosomal preparations specific to known chromosomes, and the like. The technique of fluorescent in situ hybridization of

chromosome spreads has been described, among other places, in Verma et al (1988) Human Chromosomes: A Manual of Basic Techniques, Pergamon Press, New York NY.

Fluorescent *in situ* hybridization of chromosomal preparations and other physical chromosome mapping techniques may be correlated with additional genetic map data. Examples of genetic map data can be found in the 1994 Genome Issue of Science (265:1981f). Correlation between the location of a nucleic acid on a physical chromosomal map and a specific disease (or predisposition to a specific disease) may help delimit the region of DNA associated with that genetic disease. The nucleotide sequences of the subject invention may be used to detect differences in gene sequences between normal, carrier or affected individuals.

4.20 PREPARATION OF SUPPORT BOUND OLIGONUCLEOTIDES

Oligonucleotides, *i.e.*, small nucleic acid segments, may be readily prepared by, for example, directly synthesizing the oligonucleotide by chemical means, as is commonly practiced using an automated oligonucleotide synthesizer.

Support bound oligonucleotides may be prepared by any of the methods known to those of skill in the art using any suitable support such as glass, polystyrene or Teflon. One strategy is to precisely spot oligonucleotides synthesized by standard synthesizers. Immobilization can be achieved using passive adsorption (Inouye & Hondo, (1990) J. Clin. Microbiol. 28(6) 1469-72); using UV light (Nagata *et al.*, 1985; Dahlen *et al.*, 1987; Morrissey & Collins, (1989) Mol. Cell Probes 3(2) 189-207) or by covalent binding of base modified DNA (Keller *et al.*, 1988; 1989); all references being specifically incorporated herein.

Another strategy that may be employed is the use of the strong biotin-streptavidin interaction as a linker. For example, Broude *et al.* (1994) Proc. Natl. Acad. Sci. USA 91(8) 3072-6, describe the use of biotinylated probes, although these are duplex probes, that are immobilized on streptavidin-coated magnetic beads. Streptavidin-coated beads may be purchased from Dynal, Oslo. Of course, this same linking chemistry is applicable to coating any surface with streptavidin. Biotinylated probes may be purchased from various sources, such as, *e.g.*, Operon Technologies (Alameda, CA).

Nunc Laboratories (Naperville, IL) is also selling suitable material that could be used. Nunc Laboratories have developed a method by which DNA can be covalently bound to the microwell surface termed Covalink NH. CovaLink NH is a polystyrene surface grafted with secondary amino groups (>NH) that serve as bridge-heads for further covalent coupling. CovaLink Modules may be purchased from Nunc Laboratories. DNA molecules may be bound to CovaLink exclusively at the 5'-end by a phosphoramidate bond, allowing immobilization of more than 1 pmol of DNA (Rasmussen *et al.*, (1991) Anal. Biochem. 198(1) 138-42).

The use of CovaLink NH strips for covalent binding of DNA molecules at the 5'-end has been described (Rasmussen et al., (1991). In this technology, a phosphoramidate bond is employed (Chu et al., (1983) Nucleic Acids Res. 11(8) 6513-29). This is beneficial as immobilization using only a single covalent bond is preferred. The phosphoramidate bond joins the DNA to the CovaLink NH secondary amino groups that are positioned at the end of spacer arms covalently grafted onto the polystyrene surface through a 2 nm long spacer arm. To link an oligonucleotide to CovaLink NH via an phosphoramidate bond, the oligonucleotide terminus must have a 5'-end phosphate group. It is, perhaps, even possible for biotin to be covalently bound to CovaLink and then streptavidin used to bind the probes.

More specifically, the linkage method includes dissolving DNA in water (7.5 ng/ul) and denaturing for 10 min. at 95°C and cooling on ice for 10 min. Ice-cold 0.1 M 1-methylimidazole, pH 7.0 (1-MeIm$_7$), is then added to a final concentration of 10 mM 1-MeIm$_7$. A ss DNA solution is then dispensed into CovaLink NH strips (75 ul/well) standing on ice.

Carbodiimide 0.2 M 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide (EDC), dissolved in 10 mM 1-MeIm$_7$, is made fresh and 25 ul added per well. The strips are incubated for 5 hours at 50°C. After incubation the strips are washed using, *e.g.*, Nunc-Immuno Wash; first the wells are washed 3 times, then they are soaked with washing solution for 5 min., and finally they are washed 3 times (where in the washing solution is 0.4 N NaOH, 0.25% SDS heated to 50°C).

It is contemplated that a further suitable method for use with the present invention is that described in PCT Patent Application WO 90/03382 (Southern & Maskos), incorporated herein by reference. This method of preparing an oligonucleotide bound to a support involves attaching a nucleoside 3'-reagent through the phosphate group by a covalent phosphodiester link to aliphatic hydroxyl groups carried by the support. The oligonucleotide is then synthesized on the supported nucleoside and protecting groups removed from the synthetic oligonucleotide chain under standard conditions that do not cleave the oligonucleotide from the support. Suitable reagents include nucleoside phosphoramidite and nucleoside hydrogen phosphorate.

An on-chip strategy for the preparation of DNA probe for the preparation of DNA probe arrays may be employed. For example, addressable laser-activated photodeprotection may be employed in the chemical synthesis of oligonucleotides directly on a glass surface, as described by Fodor *et al.* (1991) Science 251(4995) 767-73, incorporated herein by reference. Probes may also be immobilized on nylon supports as described by Van Ness *et al.* (1991) Nucleic Acids Res. 19(12) 3345-50; or linked to Teflon using the method of Duncan & Cavalier (1988) Anal. Biochem. 169(1) 104-8; all references being specifically incorporated herein.

To link an oligonucleotide to a nylon support, as described by Van Ness *et al.* (1991), requires activation of the nylon surface via alkylation and selective activation of the 5'-amine of oligonucleotides with cyanuric chloride.

One particular way to prepare support bound oligonucleotides is to utilize the light-generated synthesis described by Pease *et al.,* (1994) PNAS USA 91(11) 5022-6, incorporated herein by reference). These authors used current photolithographic techniques to generate arrays of immobilized oligonucleotide probes (DNA chips). These methods, in which light is used to direct the synthesis of oligonucleotide probes in high-density, miniaturized arrays, utilize photolabile 5'-protected *N*-acyl-deoxynucleoside phosphoramidites, surface linker chemistry and versatile combinatorial synthesis strategies. A matrix of 256 spatially defined oligonucleotide probes may be generated in this manner.

4.21 PREPARATION OF NUCLEIC ACID FRAGMENTS

The nucleic acids may be obtained from any appropriate source, such as cDNAs, genomic DNA, chromosomal DNA, microdissected chromosome bands, cosmid or YAC inserts, and RNA, including mRNA without any amplification steps. For example, Sambrook *et al.* (1989) describes three protocols for the isolation of high molecular weight DNA from mammalian cells (p. 9.14-9.23).

DNA fragments may be prepared as clones in M13, plasmid or lambda vectors and/or prepared directly from genomic DNA or cDNA by PCR or other amplification methods. Samples may be prepared or dispensed in multiwell plates. About 100-1000 ng of DNA samples may be prepared in 2-500 ml of final volume.

The nucleic acids would then be fragmented by any of the methods known to those of skill in the art including, for example, using restriction enzymes as described at 9.24-9.28 of Sambrook *et al.* (1989), shearing by ultrasound and NaOH treatment.

Low pressure shearing is also appropriate, as described by Schriefer *et al.* (1990) Nucleic Acids Res. 18(24) 7455-6, incorporated herein by reference). In this method, DNA samples are passed through a small French pressure cell at a variety of low to intermediate pressures. A lever device allows controlled application of low to intermediate pressures to the cell. The results of these studies indicate that low-pressure shearing is a useful alternative to sonic and enzymatic DNA fragmentation methods.

One particularly suitable way for fragmenting DNA is contemplated to be that using the two base recognition endonuclease, *Cvi*JI, described by Fitzgerald *et al.* (1992) Nucleic Acids Res. 20(14) 3753-62. These authors described an approach for the rapid fragmentation and fractionation

of DNA into particular sizes that they contemplated to be suitable for shotgun cloning and sequencing.

The restriction endonuclease *Cvi*JI normally cleaves the recognition sequence PuGCPy between the G and C to leave blunt ends. Atypical reaction conditions, which alter the specificity of this enzyme (*Cvi*JI**), yield a quasi-random distribution of DNA fragments form the small molecule pUC19 (2688 base pairs). Fitzgerald *et al.* (1992) quantitatively evaluated the randomness of this fragmentation strategy, using a *Cvi*JI** digest of pUC19 that was size fractionated by a rapid gel filtration method and directly ligated, without end repair, to a lac Z minus M13 cloning vector. Sequence analysis of 76 clones showed that *Cvi*JI** restricts pyGCPy and PuGCPu, in addition to PuGCPy sites, and that new sequence data is accumulated at a rate consistent with random fragmentation.

As reported in the literature, advantages of this approach compared to sonication and agarose gel fractionation include: smaller amounts of DNA are required (0.2-0.5 ug instead of 2-5 ug); and fewer steps are involved (no preligation, end repair, chemical extraction, or agarose gel electrophoresis and elution are needed

Irrespective of the manner in which the nucleic acid fragments are obtained or prepared, it is important to denature the DNA to give single stranded pieces available for hybridization. This is achieved by incubating the DNA solution for 2-5 minutes at 80-90°C. The solution is then cooled quickly to 2°C to prevent renaturation of the DNA fragments before they are contacted with the chip. Phosphate groups must also be removed from genomic DNA by methods known in the art.

4.22 PREPARATION OF DNA ARRAYS

Arrays may be prepared by spotting DNA samples on a support such as a nylon membrane. Spotting may be performed by using arrays of metal pins (the positions of which correspond to an array of wells in a microtiter plate) to repeated by transfer of about 20 nl of a DNA solution to a nylon membrane. By offset printing, a density of dots higher than the density of the wells is achieved. One to 25 dots may be accommodated in 1 mm^2, depending on the type of label used. By avoiding spotting in some preselected number of rows and columns, separate subsets (subarrays) may be formed. Samples in one subarray may be the same genomic segment of DNA (or the same gene) from different individuals, or may be different, overlapped genomic clones. Each of the subarrays may represent replica spotting of the same samples. In one example, a selected gene segment may be amplified from 64 patients. For each patient, the amplified gene segment may be in one 96-well plate (all 96 wells containing the same sample). A plate for each of the 64 patients is prepared. By using a 96-pin device, all samples may be spotted on one 8 x 12 cm membrane.

Subarrays may contain 64 samples, one from each patient. Where the 96 subarrays are identical, the dot span may be 1 mm^2 and there may be a 1 mm space between subarrays.

Another approach is to use membranes or plates (available from NUNC, Naperville, Illinois) which may be partitioned by physical spacers *e.g.* a plastic grid molded over the membrane, the grid being similar to the sort of membrane applied to the bottom of multiwell plates, or hydrophobic strips. A fixed physical spacer is not preferred for imaging by exposure to flat phosphor-storage screens or x-ray films.

The present invention is illustrated in the following examples. Upon consideration of the present disclosure, one of skill in the art will appreciate that many other embodiments and variations may be made in the scope of the present invention. Accordingly, it is intended that the broader aspects of the present invention not be limited to the disclosure of the following examples. The present invention is not to be limited in scope by the exemplified embodiments which are intended as illustrations of single aspects of the invention, and compositions and methods which are functionally equivalent are within the scope of the invention. Indeed, numerous modifications and variations in the practice of the invention are expected to occur to those skilled in the art upon consideration of the present preferred embodiments. Consequently, the only limitations which should be placed upon the scope of the invention are those which appear in the appended claims.

All references cited within the body of the instant specification are hereby incorporated by reference in their entirety.

5.0 EXAMPLES

5.1 EXAMPLE 1

Novel Nucleic Acid Sequences Obtained From Various Libraries

A plurality of novel nucleic acids were obtained from cDNA libraries prepared from various human tissues and in some cases isolated from a genomic library derived from human chromosome using standard PCR, SBH sequence signature analysis and Sanger sequencing techniques. The inserts of the library were amplified with PCR using primers specific for the vector sequences which flank the inserts. Clones from cDNA libraries were spotted on nylon membrane filters and screened with oligonucleotide probes (*e.g.*, 7-mers) to obtain signature sequences. The clones were clustered into groups of similar or identical sequences. Representative clones were selected for sequencing.

In some cases, the 5' sequence of the amplified inserts was then deduced using a typical Sanger sequencing protocol. PCR products were purified and subjected to fluorescent dye terminator cycle sequencing. Single pass gel sequencing was done using a 377 Applied Biosystems

(ABI) sequencer to obtain the novel nucleic acid sequences. In some cases RACE (Random Amplification of cDNA Ends) was performed to further extend the sequence in the 5' direction.

5.2 EXAMPLE 2

Novel Contigs

The novel contigs of the invention were assembled from sequences that were obtained from a cDNA library by methods described in Example 1 above, and in some cases sequences obtained from one or more public databases. Chromatograms were base called and assembled using a software suite from University of Washington, Seattle containing three applications designated PHRED, PHRAP, and CONSED. The sequences for the resulting nucleic acid contigs are designated as SEQ ID NO: 1-1009 and are provided in the attached Sequence Listing. The contigs were assembled using an EST sequence as a seed. Then a recursive algorithm was used to extend the seed EST into an extended assemblage, by pulling additional sequences from different databases (*i.e.*, Hyseq's database containing EST sequences, dbEST version 114, gb pri 114, and UniGene version 101) that belong to this assemblage. The algorithm terminated when there was no additional sequences from the above databases that would extend the assemblage. Inclusion of component sequences into the assemblage was based on a BLASTN hit to the extending assemblage with BLAST score greater than 300 and percent identity greater than 95%.

The nucleotide sequence within the assembled contigs that codes for signal peptide sequences and their cleavage sites was determined from using Neural Network SignalP V1.1 program (from Center for Biological Sequence Analysis, The Technical University of Denmark). The process for identifying prokaryotic and eukaryotic signal peptides and their cleavage sites are also disclosed by Henrik Nielson, Jacob Engelbrecht, Soren Brunak, and Gunnar von Heijne in the publication "Identification of prokaryotic and eukaryotic signal peptides and prediction of their cleavage sites" <u>Protein Engineering</u>, vol. 10, no. 1, pp.1-6 (1997) incorporated herein by reference,. A maximum S score and a mean S score, as described in the Nielson et al. reference, are obtained from each assembled contig. Table 3 sets forth the nucleotide range for each sequence of SEQ ID NO: 1-1009 that encodes a corresponding amino acid sequence containing the signal peptide sequence and its cleavage site: the maximum S score and the mean S score obtained for each sequence.

A signal peptide or leader peptide is usually a segment of about 15 to 30 amino acids at the N terminus of protein that enables the protein to be targeted to a cell membrane or secreted from a cell. Generally, the signal peptide acts as an export lable and is removed as the protein is secreted in its final form.

The nearest neighbor result for the assembled contig was obtained by a BLASTX version 2.01al 19 MP-Washington University search against Genpept release 120 and Geneseq database (October 12, 2000, update 21 (Derwent)), using BLAST algorithm. The nearest neighbor result showed the closest homologue for each assemblage from Genpept (and contains the translated amino acid sequences for which the assemblage encodes). The nearest neighbor results for SEQ ID NO: 1-1009 are shown in Table 2.

Tables 1, 2 and 3 follow. Table 1 shows the various tissue sources of SEQ ID NO: 1-1009. Table 2 shows the nearest neighbor result for the assembled contig. The nearest neighbor result shows the closest homolog with an identifiable function for each assemblage. Table 3 contains the start and stop nucleotides for the translated amino acid sequence for which each assemblage encodes. Table 3 also provides a correlation between the amino acid sequences set forth in the Sequence Listing, the nucleotide sequences set forth in the Sequence Listing and the SEQ ID NO. in USSN 09/491,404.

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
adult brain	GIBCO	AB3001	31 45 61 78 96 122 126 132 163 169 171-172 175-176 181 203 212 220 222 230 251-252 258 263 267 279 336 343 358 396 400-401 422 428-429 431 437 456 464 487 503 513 524 561 580 583 609 619 682 812 946 958 965 980 983 989 999
adult brain	GIBCO	ABD003	5 23 26 28-29 31 34-36 61 74 78 87 111-113 116 122-123 129 139 143 148 159 163 167 175-176 178 181 183 186 201-204 206 208-209 212 214 220 222 228 230 234-235 237 246 249-250 252 255 259 262-264 266-267 279-280 286 329 336 351 358 379 396 422 429 431 437 439 444-445 450 452 456 467-468 479 484 503-504 507 513 523-524 526 533 550 553 559 561-562 578 580 583 636 638 640 683 711 759 764 769 772 799 803 824 830 842 865 885 900 902 906 910 922-924 932-933 941 945 951 955 958 965 971 983-984 989 999 1005
adult brain	Clontech	ABR001	81 122 148 181 183 204 207 233 237 250 267 301 346 394 396 437 439 457 505 563 618 653 655 721 764 795 885 942 949
adult brain	Clontech	ABR006	148 152 222 257 269 583 640 677 878
adult brain	Clontech	ABR008	2 10-11 13-14 19-20 23 28-29 34-35 37 39-40 45 49-50 52 60 73-74 78 83 87-91 94 98 101 109 114-117 122-123 143 145 148-150 152 156 162 168 173-178 181 183 187 189 194 204 206-209 212 214-215 220-221 228 231 233-238 246-247 249-253 255-260 262 266 269-270 272 276 278-281 284 294 301 313 316-320 335 337-338 343 363 372 379 388 390-392 396 400-401 403 405-407 414 417 422-423 425 427-428 433 437 441 443-446 452-453 456 464 467 469 473-479 482 484 487-488 491 497-498 500 502 504-505 507 519-520 523-526 533 544-545 553 555-556 563 570-571 574-576 578-580 583 615 618-619 637-638 643-644 653 655-656 661 663 678 680 689-690 695 699 702 705 717-718 720 722 725-726 742 746 752 754-755 759 761 763-765 767 769 772-774 776 784-789 792 795 799 809-810 812 814-815 817 834 840 842 844-846 852 855-856 858-860 870-873 875 877 885-886 888 890-897 903-904 910 928 930-932 939-942 946-947 951-952 955 957 960 964-965 967 971 975-976 978 986-987 989 992 999 1001
adult brain	Clontech	ABR011	214 965

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
adult brain	BioChain	ABR012	152 498
adult brain	Invitrogen	ABR013	142 207 254 396 442 498
adult brain	Invitrogen	ABT004	2 23 31 34 78 96 116 129 141 160 176-177 181 183 202 214 231 233 248 256 258-260 262 278 310 336-337 379 416 437 439 443-444 450 452 454 464 467 479 484 500 504 519 526 553 570 590 619 638 640 647 653 655 678 711 759 764 789 795 799 885 887 892 902 905 907 910 915 922 941-942 955 960 989 999
cultured preadipocytes	Strategene	ADP001	17 37 39 74 79 111 129 152 160 200 222 248 252 268 274 358 385 450 456 504 526 571 583 619 633 640 740 803 816 829 842 887 939-940 965 973 977 986
adrenal gland	Clontech	ADR002	4 6 19 36 39 49 51-53 74 76 118 122-123 147-148 152 156 160 167 171-172 181 183 204 206 212 223-224 228 233-234 246 249-250 254-255 262 274 278-279 284 287 294 317 336 355 358 366 379 392 401-402 412 417 420 431-432 439 464 470 479-480 484 503-504 506 509 519 524 526-527 541 553 555 561 583 614 619 631 638 646 682 738-739 756 760 764 770 800 802-803 816-817 838 847 852 863 881 887 905-906 910 923 926 932 941 950-951 989 999 1002
adult heart	GIBCO	AHR001	6 20 26 29 31 34 37 39 41 46 61 74 78 101 114 116-118 122-124 128 145 147-148 152 155 163 175-176 178 181 183 200 204 206 210 212 215 228 230 234-235 237 246 248-252 255-256 262-263 266-268 272 278 280 282-283 286 294 309 313 350-351 358 370 374 379 391-392 394 397 400-401 409 420 423 431-432 434 436 438 441 443 452 455-456 461 467-468 479-480 484 487 498 500 503 505 511 519 533 541 550 552-553 558 561-562 568 575 583 590 597-598 603 619 636-638 644-645 667-668 680 684 711-712 714-715 723 732 750 789 803 805 816 822 828 885 889 900 902 905 908 910 916-917 923-924 932 935 937 939 941 950 952 954 960 965 974 982 984 987 993 1005
adult kidney	GIBCO	AKD001	4 13-14 19-20 23 26-31 37 39 47 49 54 61 64 78 81 87 91 98 101 114 118 122-123 127 129-130 141-143 145 148-149 155-158 160 163 168 171-172 175-176 178-181 183 197-198 200 203-206 208 212 215 221-222 228 230 234 237 241 245-246 250-252 254-257 262-263 265-269 278-279 282-284 286 297 301

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			308 333 336 352-353 358 371-372 379 381 386 391 394 396-397 400-401 405 409 417 420 428-429 431 436-437 443 445 450 456 463-466 468 475 479-480 484 487 495 498-499 503-505 507 511 513 517 523 526 529 533 539 541-542 550 552-553 555 561 570-572 575 577-578 583 587 597 604 606 609 619 636 638 640-642 648 680 682 701 706 714 721 732 740 747 771 792 803 805 809 811-812 829 838 842 862 865 885 889 900 902 905-906 908 910-911 918-921 924 926 928-930 937 939 941-942 950-951 953 955 958 960 963 965 967 976 978-979 982-984 1005
adult kidney	Invitrogen	AKT002	19 31 78 81 91 98-99 122 142 145 148 152 158 169 176 248 254 256 262 266 279 296-297 301 321 353 372 401 405 416 420 429-430 441 456 464 498 504 507 523 526 533 541 583 592-597 649 701 791 838 862 868 911 926 933 946-947 958 960 971
adult lung	GIBCO	ALG001	19 33 48 61 96 98 101 108 111 114 145 148 179 183 194 198 200 205 212 220 228 234 246 248 250-251 254-255 263 268 277 279 289 298 306 337 343 372 379-380 385 401 405-406 408 410 420 431 440 443 445 449 455 484 499 503 507 513 517 571 590 597 617 636 640 714 732 749-750 805 885 900 905 910 918 941 955 958 960 977 980 1001 1005
lymph node	Clontech	ALN001	43 48 53 108 123 136 142 147 160 178 181 183 200 205 228 244 246 250 254 268 270 291 379 399 419 431 440 442 479-480 484 519 533 539 553 559 565 583 616-617 619 636 662 701 740 805 833 910 913 928 941 977
young liver	GIBCO	ALV001	19 42 45 61 64 84 98 107 109 122-123 129-130 133 142 148 168-169 178 181 183 200 205 207 227-229 232 238 246-248 250 253-255 262-263 265 268 279 317 336 371 377 392 400 410 431 436-437 443 445 448-450 484 487 513 533 545 559 561 570 578 617 632 638 640 648 680 771 803 816 836-838 885 906 926 940 986
adult liver	Invitrogen	ALV002	13-14 26 36 54 64 74 76 109 117 122 179 181 183 187 204 215 221 225 229 232 247-248 250 256-257 275 304 307 315 317 321-322 371 377 379 386 416 420 448-449 457 464 475 479 481 483-484 504 507 526 553 557 570 619 627-629 632

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			638 640 653 655 675 680 701 752 768 827 848 865 882 885 889 910 951 955 959 963 967 978 989 999-1000
adult ovary	Invitrogen	AOV001	4 12 19 23 28-32 34-37 39 45 48 52 54 60-61 64-65 67 76 78 87 96 98-100 108 111-112 114 116-118 122-123 126 129-130 132-134 137 139 142-145 147-149 152 162-163 169-172 176 178 180-183 187 191-192 197-202 204-206 212 214-217 219-222 228 234-235 237 242 246-248 250-252 254-256 262 265-269 274 279-280 282-284 294 308-309 313 317 336-337 346 358 361 364 371 374 379 391-392 394 396-397 400 408 414 418 420 423 425 428-429 431 435-437 440-441 443-447 450 452 455-459 463-464 467-468 479-480 484 487 492 495 499-500 503 505 512-513 517 519 524 533 539 545 553 555 557-559 561 565-566 568 571 575 577-578 581 583 590 597 605 610 613 616-617 619 636 638 640 645-646 649-650 654 662 671 680 682 694 697 701 711 732 735 739-741 750 753 760 764 771 780 785 789 792 803 806 810 812 821 831-832 838 841-842 879 885 887 900 902 905-906 908-912 917 921-922 924 928 936-939 941-942 946 950-952 957-958 960 962-965 979 982 987 989 994 998-999 1005 1008
adult placenta	Clontech	APL001	122 148 168 181 194 200 248 262 268 317 436 541 561 803 838 911 971
placenta	Invitrogen	APL002	38 61 78-79 142 149 176 187 194 206 215 246 252 278 337 346 379 400 456 464 478-479 484 487 504 519 526 553 571 638 640 732 842 910-911 918 941 958
adult spleen	GIBCO	ASP001	23 26 39 43 48 61 63 78 87 98 108 110 123 136 142 157 176 178 181 183 197-198 201-202 205-206 213 220 222 228 234 237 244 250-252 254-255 257 263 294 305 320 336-337 354 358 371-372 376 379 397 400 405 410 414 431 437 440 455-456 484 487 498-499 504 506-507 511-512 519 523 526 529 533 539 550 561 565 572 575 583 586 597 616-617 619 621 636 640 687 701 713 732 740 748 803 812 816 835 910 930 939 946 956 958
testis	GIBCO	ATS001	20 23 29 61 64 76 114 123 126 143 145 148-149 175 178 182 200 203 206 209 235 248 252 257 263 268 279-281 283-284 333 358 371 391 396 400 418 423 431 438-439 441

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			445 456 479-480 487 490 505 507-508 516-517 521 524 533 550 559 561-562 582 597 606 638 646 676 680 750 772 803 834 877 908 911 914 937-938 950 989 999
adult bladder	Invitrogen	BLD001	23 37 77-78 84 160 176 178 181 215 218 248 252 262 274 299 334 351 401 464 474 484 517 543 619 663 692 729 908 910 918 937 941 951 960 962
bone marrow	Clontech	BMD001	19 31 39 43 48 52-53 95-96 98 100 108 111-112 114 117 122-123 136 141-142 144-145 147-149 152 161 163 169 181 183 187 194 201 204-205 208 213 222 228 234 241-242 244-246 248-251 254-255 257 267 272 274 282 286 288-289 292 294 313 317 335 337 339 346-347 358 363 365 374 379 391-392 395-398 406 408 414 418 423 428 436 440-442 444-445 456 475 479 484 495 498-500 504 508 511 516 519 526 533 539 541 553 556 559 561 565 571 573 583 597 612 617 619 638 640 646 649 651 677 681 685 707 709-710 721 734 764 771 803 806 811 838 852 858 869 885 908 910 916 922 930 936-937 941 951 965 982 985 989 991 995 999 1005 1008
bone marrow	Clontech	BMD002	31 39 43 48 68 71 91 108 122-123 134 136 142 148-150 152 161 169 178 181 194 196 204-205 208 244 246 254 262-263 265 267 272-273 300 320 343 356 363 372 379 405 408 413-414 430-431 436 440-441 454 479 484 486 512-513 517 519 533 553 559 570 583 590 617-619 634 637 651 674 692 793-794 800 803 818 852 880 904 910 930 936 941 950
bone marrow	Clontech	BMD004	142 152 254 274
adult colon	Invitrogen	CLN001	26 29 48 61 108-109 129-130 144 176 194 215 221 252 401 436 440 450 498 511 533 583 590 616-617 706 764 905 939 955
adult cervix	BioChain	CVX001	6 16 19-20 29 35 37 43 45 64 73 75-76 86 92 96-98 100-101 105 108 111 113 122 143 145 147-149 163-165 167 172 174 178 181-183 187 200-201 206 222 234 237-238 242-243 246 248 250-251 253 261-262 265 268 270 274 279 283-284 294 308 343 345 352 365 379 381 391 400 409 420 423-424 428 436 443-444 463-464 473 479-480 484 487 505 508 510-512 516-517 519 523-524 533 539 553-555 558-559 561-562 575 578 583 591 597 619 643 645-646 650 657 671 680 740 764 771 796 803 811 816 865 889 908

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			910 926-927 933 937 941 960 963 965 967-968 977 982 989 999 1008-1009
diaphragm	BioChain	DIA002	26 152 499 680
endothelial cells	Strategene	EDT001	13-14 19 23 26 30-32 34 39 67 73-74 76 78 91 101 109 114 116 118 129 145 149 152 156 160-161 167 176 180 183 187 197 201 203-204 206 209 215 222 226 228 230 237 246 248 250-252 256-257 262 266 276 279 282-283 286 309 312-313 343 358 372 391-392 394 396 400-401 405 409 413 420 423 429-431 436 438 443-445 450 455-456 479 484 487 498-499 503 507 509 511 513 523 561-562 571 575 583 619 639 646 653 655 680 711 721 729 739 771-772 775 779 795 803 805 834 838-840 885 889 900 905-906 911 917-918 922 924 930 942 946 955 958 960 977-979 982-984
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM001	122 148 436
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM003	122 148 379 436
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM004	122 148 436
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM005	148
esophagus	BioChain	ESO002	152 178 583
fetal brain	Clontech	FBR001	122 148 181 279 284 484 553 575 619 668 911
fetal brain	Clontech	FBR004	122 190 212 379 479 484 541 905 922 924 941 950
fetal brain	Clontech	FBR006	2 23 31 36 39 42 44 49 52 78 87 114 117 122-123 145 148 176-177 180-181 187 204 208 210 215 220 235 238-239 241 245-246 251 253 256 259 266 270 278 280 286 314 317 337 372 379 392 396 400-401 405-406 410 414 423 428 439-440 443 445 452 467 473 479 484 487 491 497 500 504 517 519 524 526 544 553 556 561 563 568 570-571 573 577 586 619 647 653 655 664-665 680 739 742 746 754 766 772-776 784 795 798 834 840 842 863 878 885 892-893 898-899 910 930 941-942 946 952 965 971 976 987 993
fetal brain	Invitrogen	FBT002	19 31 34-35 44-45 78-79 87 96 101 116 129 176 181 204 206 233 235

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			256-257 259 262 278 280 317 320 337 380 396-397 401 437 443 446 450 453 464 480 484 498-499 504 526 577 591 619 640 664 680 697 710 764 900 902 905 910 958
fetal heart	Invitrogen	FHR001	500 910
fetal kidney	Clontech	FKD001	39 47 96 98 122-123 148 156 181 200 207 246 268 274 279 283 300 379 411 445 464 468 479 484 506 542 553 561 583 619 680 686 712 747 910 941
fetal kidney	Clontech	FKD002	479 484 583 803 910 941
fetal kidney	Invitrogen	FKD007	864
fetal lung	Clontech	FLG001	64 96 143-144 168 194 206 234 266 335 337 363 500 507 561 619 968
fetal lung	Invitrogen	FLG003	3 13-14 55 61 79 122-123 148 160 181 183 194 200 234 248 250 252 266 268 273 289 294 336 358 428 432 436 484 507 510 513-514 533 541 557-558 582-583 597 671 711 764 777 806 811 817 905 933 978
fetal lung	Clontech	FLG004	951
fetal liver-spleen	Columbia University	FLS001	13-15 19-21 23-26 28-30 32 34 37 39 45 47-49 56 67 72-74 78 84 87 91 96-98 101 103-104 108 111 114 116 122-123 126 129 131 133 142-145 147-149 151-152 156 160-161 166 168-169 172 176 178-179 181 183-185 192-194 197-202 204-206 208 215 221-222 224 228-229 232 234-235 237 246 248-252 254-257 262 266-268 272 274 278-280 282-287 294 313 315 321 333 336-337 343-344 358 372 377-379 386 391-393 397 400-402 404-405 409-410 418 420-421 429 431 436-437 440-441 443 445 448-450 456-457 464 473 475 478-481 483-484 487-488 498 500 503 505 507 509 513 522-523 528 533-534 541 551 553 558 560-562 564-565 570 575 577-578 583 586 590 597 600 605-607 617 619 632 636 638 640 644 646 672 677-680 705 711 729 732 735-738 740 742 748 760 763-764 771-772 792 802-803 805-806 812 816-817 820-821 824-827 834 838 842-843 848 853 861 865 878 885 887 889 900 902 904-906 908 910-911 917 924 926 928 930 934 936-937 941 944 946 950-951 955 958 960 963 965 974-980 982-983 988-990 999
fetal liver-spleen	Columbia University	FLS002	4 8 12 15-16 18-21 23-24 26 32 37 39 47 54 61 64 67 71-72 74 76 79 83-84 87 91 96-98 100-104 109 111-113 122-123 129 133 141 145 147-149 152 161 163 169 171-172 174 178-181 183 185 187-188 192-195 198-202 205 207-209 213 215 221-222 229 232 234-235 237 241

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			244-246 248 250 262 265 267-268 270 274 278-280 283-284 290 294 300 311 313-315 317 331 337 341 346 351-352 358 360-361 371-372 377 382 391-393 397 399-401 404-405 410 414 425 429 431 436 440-441 445-446 448-450 453 456 464 473 475 479-480 487 492 498 500 503-504 507 512 517 519 523 526 540 557 561-563 565 574-575 577-578 583 590 597 605-606 608 611 614 616 619 631-634 636-638 640 646 649-650 662 671-673 676-678 682 684 701-702 704-705 711 716 732 735 748 760 762-764 768 771-772 779 790 802 805 815-816 834 838 842 848 865 878-879 883 887-889 903 905-906 910 916-917 922 924 928 930 939 944 946 950 955-956 958 960 965 975 977 982-983 987-988 993-994 998 1004
fetal liver-spleen	Columbia University	FLS003	377 732 889 938
fetal liver	Invitrogen	FLV001	23 29 39 84 109 194 208 221 232 247-248 278 301 321 336-337 370-371 379 443 448-449 464 475 479-480 498 500 533 550 578 590 632 636 640 678 680 683 751 763 803 882-883 885 887-889 910 921 942 946 951 963 988
fetal liver	Clontech	FLV004	37 122 200 232 268 274 377 583 946
fetal muscle	Invitrogen	FMS001	29 37 41 64 66 74 148 164 200 202 208-209 252 257 259 262 265 268 274 279 337 346 379 445 480-481 505 507 553 555 561 571 606 640 676 781 801 838 910 926 928 951 957 960 963 965
fetal muscle	Invitrogen	FMS002	200 268 274
fetal skin	Invitrogen	FSK001	23 29 31 34 49 78 84 87 96 100 112 116 133 143 148 163 168 172 176-177 181 193 199-202 208 215 222 235 240 246 248 252 256-257 262-268 274 280 282 294 309 314 317 322 346 358 371 373-375 379 414 417 419-420 436-437 441 445 454 456 458 479-480 484 499-500 504 507 513 519-520 526 533 539 541 545-547 550 561 565 570-571 575 577 583 590 598-599 619 644 650 665 697 702 706 739 742 744 784 790 792-793 812 816 861 877 889 906 910 918 922 941 949 951-952 955 962 964-965 968 979 983 987 989 999
fetal skin	Invitrogen	FSK002	200 257 265 268 274 513 688
fetal spleen	BioChain	FSP001	39 431 523 533 617
umbilical cord	BioChain	FUC001	19 28-29 34 39 74 96 99 101 111 114 116 122 143 145 148 163 168 175 178 181 183 197 200 205 212

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			222 228 230 237-238 246 248 252-253 255 257 259 262 265 268-269 272 274 282 325 351 379 396 400-401 413 429 441 443 445 452 456-457 467-468 479 484 487 505 513 517 519 523 533 541 553 555 561 571 575 577 583 590 601-602 605-606 619 636 645 680 693 698 711 757 759 764 803 814 816 821 853 885 889 900 906 908 910 924 926 932 937 941 943 946 951-952 955 958 976 987 989 993-994 999
fetal brain	GIBCO	HFB001	13-14 19 26 29 31-32 39 44-45 61 67 74 78 88 100 114 122-123 126 129 148 152 163 167 169 171-172 175-176 180-181 187 201-204 206 209 212 215 220 222 227-228 230 233-235 237 246 249 251 258-259 262-263 266 269 279-280 282 284 286 333 337 340 342 355 358 362 366 379 391 394-397 406 422-423 428-429 431 436-437 443-446 450 452 456 467-468 479-480 484 498 504-505 513 517 523 526-527 533 539 541 558-559 561-562 574 580 583 605 619 635 638 643 680 682 708 711 739-740 742 764 776 803 812 823 865 885 900 902 905 910 917 924 928 932 939 941 945 958 960 964-965 974 978-979 984
macrophage	Invitrogen	HMP001	152 201 498 983
infant brain	Columbia University	IB2002	2 20 23 26 28-29 31 37 39 44 57 74 78-79 111 118 122-123 126 129 143 145 148 155 168-169 175-176 178 181 185-186 191 200-202 208 212 214-215 220 222 224 228 230-231 235 237 239 248-249 252 255-260 262 266-269 272 280 284 286 289 313 323 326 329 346 358 361 379 396 400 412 422-423 428 437 439 443 445 450 452 457 461 467-468 479-480 484 487 490 498 500 504-505 523 526 533 541-542 547 561-562 571 574-575 580 605 635 637 640 647 653 655 678 680 711 733 746 761 764 766 771 776 795 865 885 887 900-901 905 907 910 917 924 930 932 941-942 951 958 960 962 967 974-975 979 982-983 989 993 999 1003-1004
infant brain	Columbia University	IB2003	23 31 53 87 107 123 160 175 185 197 202 207 215 222 237 252 256-258 274 284 289 326 358 396 400 437 445 452 462 464 467 487 500 504 526 575 583 590 605 630 653 655 703 733 757 764 795 865 884-885 900 905 919 924 974-975 982
infant brain	Columbia University	IBM002	44 169 248 746 764 958
infant brain	Columbia	IBS001	76 119 147 149 181 248 329 361

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
	University		379 764 910 942 951
lung, fibroblast	Strategene	LFB001	13-14 26 78 84 91 98 114 122 148 176 197 204 222 246 251 266 379 387 431 437 441 464 479 484 533 553 571 583 619 645-646 711 739 752 910 926 950 965 978 984
lung tumor	Invitrogen	LGT002	13-14 19 31-32 34-39 43 48 64 67 74 76 87 93 95-96 101 111-112 116 122-123 134 138 142 144-145 147-148 151-152 160 172 178-179 181-183 187 191-194 197-198 200-202 205 208 210 218 226 228 234 237 246 248 250-252 254-255 257 260-262 265 268 274 277-279 289 301 320-321 333 336 343 352 355 358 366-368 371 374 379 391-392 397 400-401 406 410 414 423 431 436 440-441 455-456 458 463-464 468 478-480 484 487 498 503-504 511 519 526-527 529 533 541 553 557 561 570-571 575 578 581 583-586 588-589 597 606 616 619 636 638 640 648 650 652 657 680 700 705-706 708 716 721-722 729 732 739 744-745 752 762 764 782 795 803 812 816-817 838 863 874 877 906 910-911 922 926 941 951 955 957-958 962-963 968-969 977-978 982-983 996-997 1007
lymphocytes	ATCC	LPC001	13-14 35 66 79 95 106-107 112 122-123 149 152 178 181 201 205 246 251-252 267 293 299 358 379 384 400-401 409 415 418 439 443-444 451 456 458 479 484 487 513 533 568 572 575 583 614 619 686 706 721 730-731 739 747 764 789 905 910 941-942 950 965 978-979 1007
leukocyte	GIBCO	LUC001	13-14 19 23 30-32 36 39 45 48-49 60-61 63 67 73-74 78-79 81-82 84 87 91 98-99 107-109 111-112 114 122-123 129 142 144-145 148-150 152 170 176 179 181 183 187-188 194 198 201-208 212-213 215 222 228 235 237 241-242 244-246 249-251 254-257 263 267 278-280 282-284 286 289-290 295 302 308-309 313 317 333 337 343 346 356-358 371 379 391-392 394 397 400-401 404 406-410 412-415 423-424 429 431 436 439-441 443-445 450 456 458 479-480 484 487-488 495 498-500 503 505 511-514 519 523 530-533 539 541 555 559 561 565-566 570 572 577-578 583 590 595 597 617 619 633 635-636 639-640 646 660 670 672 677 680-681 698 703 705 729 732 739-740 743 747 750 763-764 771 782 792-793 803-805 809 819 838 857 866-867 885 888

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			900 905 910-911 924 926 928 930 941 948 950-953 955 962-963 965 977-979 984 987 989 999 1008
leukocyte	Clontech	LUC003	19 26 68 76 96 122 147 152 198 201 205 208 284 317 354 358 430 436 440 479 511 533 541 553 561 583 589 646 698 732 764 766 838 984
melanoma from cell line ATCC #CRL 1424	Clontech	MEL004	8 23 36 69 91 114 122-123 126 148 151 181 202 204 227 246 256-257 265 313 379 391 400 417 466 478-479 487 496 519 521 523 561 570 583 590 669 728 764 784 838 842 910 941 950 965 970
mammary gland	Invitrogen	MMG001	4 19 23 26 29 34-39 43 45 48 55 64 66 74 78 87 96-97 114 116 126 129 136 142 149 151 155-156 160 164 168 173 175-176 178 180-181 183 192 197-200 202 204 207-208 215 222 226-228 230 232 235-238 242 246 248 250 252-257 261-262 268 272 274 278 280 301 303 322 329 335 337 343 363 368-371 374 379 381 391 397 400-401 417 426 429 431 437 439-441 443 445 449-450 455 464 475 478-479 484-485 487-488 498-499 504 507 512 517 519 523 526 532-533 553 557 565 570-571 573 575 577-578 590-591 606 617 619 636 640 646 648 663 677-678 680 691 697 702 708 711 732 744 764 792 803 811-813 817 875-877 885 887-888 900 902 905 908 910-911 918 921-922 934 937 939 941-942 946 951 958 960 965 968 983 989 993 999 1003 1008
induced neuron cells	Strategene	NTD001	39 122 148 152 181 212 246 266 313 337 358 379 452 467 479 484 519 553 561 583 621-626 680 872 881 910 924 941
retinoid acid induced neuronal cells	Strategene	NTR001	37 148 152 168 541 583
neuronal cells	Strategene	NTU001	29 37 147 202 221-222 237 246 262 337 361 391 400 429 439 460 487 504 526 541 583 772 816 924 945 965
pituitary gland	Clontech	PIT004	391 396 764
placenta	Clontech	PLA003	123 183 544 803
prostate	Clontech	PRT001	60-61 76 96 122 145-148 153-154 175 178 183 201 204 226 228 235 237 241 245 248 250-251 256 262 265 280 284 324-325 337 397 400 409 436-437 456 464 478 480 487 489-490 492 508 516-517 524 552 561 583 605 722 740 747 849 889 906 924 926 939 958 974 1005
rectum	Invitrogen	REC001	26 29 43 48 70 74 80 108 114 135-136 140 168 178-179 208 226 257

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			262 346 348 371 379 411 413 436-437 475 479 484 499 504 517 526 534 548-549 555 570 577-578 606 636 697 729 764 778 793 885 900 906 908 910 937 941 951 965 989 999
salivary gland	Clontech	SAL001	7 38 43 74 87 98 112 122 136 142 148 162 169 181 183-185 207 215 228 235 250 254-255 265 280 349-350 394 437 443 464 508 515-516 519 559 598 614 619 658 666-667 680 724 762-763 771 803 816 842 930 933-934 953
salivary gland	Clontech	SALS03	48 108 515 617 900
skin fibroblast	ATCC	SFB001	39
skin fibroblast	ATCC	SFB002	222 803
skin fibroblast	ATCC	SFB003	237
small intestine	Clontech	SIN001	16 19 29 39 48 56 65 73 96 108 122 136 148 152 155 160 162 165 168 172 181 191 208 234 244 246 266 282 296 379 394 431 440 443 464 479-480 484 519 571 578 583 617 619 648 662 694 703 752 763 806 838 908 910 926 937 941 966 972 976
skeletal muscle	Clontech	SKM001	34 112 116 147 149 152 163 167 373 379 484 515 553 561-562 781 838 910 941
spinal cord	Clontech	SPC001	19 22 29 31 55 58 70-71 78 122 134 145 148 150 152 159-160 163 166 171 175-176 183 200-201 203-204 220 222 224 235 237 246 248 250 257 262 266-268 279-280 327-328 330 337 343 346 371 379 389 396 416 429-430 437 443 452-453 456 467 475 479 493-494 498 500 502 541 544 553 561 583 619 635-636 638 640 680 682 696 764 785 900 902 910 941 950 982 994
adult spleen	Clontech	SPLc01	254 529 701
stomach	Clontech	STO001	48 53 72 74 122 142 152 161 178 181 200-202 204 208 240 251 254 265 268 309 347 397 410 437 512 539 550 583 616 636 657 659 720 722 921
thalamus	Clontech	THA002	35 53 78 114 123 156 176 181 228 235 246 252 255-256 265 280 329 331 343 379 437 452 457 467 479 484 496 507 519 553 571 593 619 692 723 754 758 764 853 910 925 941 950 967 981 1003
thymus	Clontech	THM001	29 78 112 122 148 151 160-161 169 176 180-181 183 188 198 201 204-206 212 250 254 313 374 379 397 412 429 437 446 453 471-472 484 513 521 529 552-553 561 565 619 636 666 708 739 742 764 771 816

TABLE 1

TISSUE ORIGIN	RNA SOURCE	HYSEQ LIBRARY NAME	SEQ ID NOS: OF NUCLEOTIDE(S)
			838 910 941-942 944 947 958 969 979 982 989 999 1007
thymus	Clontech	THMc02	9 19 32 36 63 67 74 78 80 85-86 122-123 138 142 145 147-148 160-161 169 175-176 181 183-184 187 194 198 202 204 208 211 238 244 246 250 252-254 257 262 265 270-271 283-285 317 333 349 359-360 379 400-401 406 413 418 429 431 433 436 440-441 473 479 484 487 512-513 517-518 523 525 529 533 535-537 541 544 553 556 561 565 567-570 572-573 578 583 615-619 636 644 660-661 681 683 687 698 732 739 763-764 783 785 789 807-808 811 816 842 852 864 868-869 900 904 906 910 924 926 930 938 941 965 968 974 979 992 1006-1007
thyroid gland	Clontech	THR001	5 10 13-14 19 23 35 37 39 47 59-61 64 74 79 87 100 110 112 117 122-123 133 141-142 145 148 152 156 160 168 181 187 199-202 204-205 207-208 210 220 224-225 228 234-235 237 246-247 251-252 254-256 262 265 267-268 280-281 284 286 301 308 325 332-333 335 337 343 346 363 371 374 378-379 383 394 396-397 400 420 429 431-432 436 445 452 456 464 467-468 474 479-480 484 487 492 499 507 519 522 533 537 550 553 559 561 569 583 619 638 650 653 655 672 678 680 692 705 719 727 748 764 766-767 769 792 797 816 821 854 906 910-911 921 924 926 928 941 946 951 958 960-961 967 971 974-975 978 984 989 999
trachea	Clontech	TRC001	43 48 108 112 142 148 168 204 208 212 221-222 254 265 282 286 317 371 382 425 440 501 553 565 910
uterus	Clontech	UTR001	1 37 39 62 145 148 163 183 188 200 257 265 268 346 372 405 408 420 431 520 538 561-562 571 640 680 711 842 850-851 885 910 957

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
1	AF208846	Homo sapiens	BM-004	172	43
2	Y53871	Homo sapiens	A human brain-derived signalling factor polypeptide.	574	99
3	AE003620	Drosophila melanogaster	CG8486 gene product	112	33
4	AF193807	Homo sapiens	Rh type B glycoprotein	1204	96
5	Y87156	Homo sapiens	Human secreted protein sequence SEQ ID NO:195.	89	46
6	Y71062	Homo sapiens	Human membrane transport protein, MTRP-7.	135	30
7	AB047936	Macaca fascicularis	hypothetical protein	81	38
8	Y36156	Homo sapiens	Human secreted protein #28.	158	68
9	AB040964	Homo sapiens	KIAA1531 protein	495	100
10	U29725	Homo sapiens	BMK1 alpha kinase	114	35
11	X00822	Gallus gallus	collagen type III	54	52
12	Y27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	119	43
13	W74813	Homo sapiens	Human secreted protein encoded by gene 85 clone HSDFV29.	722	92
14	W74813	Homo sapiens	Human secreted protein encoded by gene 85 clone HSDFV29.	722	92
15	AF119851	Homo sapiens	PRO1722	333	70
16	AF264750	Homo sapiens	ALR-like protein	133	100
17	X91014	Mus musculus	alpha 1 type XI collagen	131	72
18	AF090930	Homo sapiens	PRO0478	109	90
19	Y86456	Homo sapiens	Human gene 46-encoded protein fragment, SEQ ID NO:371.	618	95
20	AF084535	Homo sapiens	laforin	1809	100
21	Y27585	Homo sapiens	Human secreted protein encoded by gene No. 19.	587	98
22	Z68748	Caenorhabditis elegans	Similairity to Yeast hypothetical protein YEH4 (SW:YEH4_YEAST)~cDNA EST yk87c11.3 comes from this gene~cDNA EST yk87c11.5 comes	214	37

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			from this gene~cDNA EST yk497d5.3 comes from this gene~cDNA EST yk186a5.5 comes from this gene~cDNA EST yk243b10.5 comes from this gene~cDNA EST yk497d5.5 comes from this gene		
23	D86973	Homo sapiens	similar to Yeast translation activator GCN1 (P1:A48126)	12053	100
24	Y09945	Rattus norvegicus	putative integral membrane transport protein	458	50
25	U25739	Mus musculus	YSPL-1 form 1	719	77
26	AK024427	Homo sapiens	FLJ00016 protein	668	100
27	AP001707	Homo sapiens	human gene for claudin-8, Accession No. AJ250711	603	100
28	U16030	Brugia malayi	cuticular collagen Bmcol-2	78	37
29	G02479	Homo sapiens	Human secreted protein, SEQ ID NO: 6560.	442	100
30	Y13375	Homo sapiens	Amino acid sequence of protein PRO262.	1806	99
31	AF077226	Homo sapiens	copine III	1757	65
32	W75198	Homo sapiens	Human secreted protein encoded by gene 3 clone HCEDO84.	208	100
33	AF151978	Homo sapiens	amino acid transporter B0+	3436	100
34	Y66735	Homo sapiens	Membrane-bound protein PRO1153.	1006	100
35	AC003093	Homo sapiens	OXYSTEROL-BINDING PROTEIN; 45% similarity to P22059 (PID:g129308)	764	60
36	AF286861	Fasciola hepatica	tegumental antigen-like protein	79	30
37	AF201945	Homo sapiens	HNOEL-iso	2152	100
38	AF258465	Homo sapiens	OTRPC4	1668	99
39	AF173003	Homo sapiens	apoptosis regulator	2421	100
40	Y53023	Homo sapiens	Human secreted protein clone qf662_3 protein sequence SEQ ID	128	41

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			NO:52.		
41	M25750	Oryctolagus cuniculus	sarcolumenin precursor	2307	97
42	G03797	Homo sapiens	Human secreted protein, SEQ ID NO: 7878.	186	75
43	X57805	Homo sapiens	immunoglobulin lambda light chain	1102	91
44	AE003689	Drosophila melanogaster	CG4596 gene product	419	44
45	Y50934	Homo sapiens	Human fetal brain cDNA clone vc30_1 derived protein #1.	644	100
46	Y19562	Homo sapiens	Amino acid sequence of a human secreted protein.	80	45
47	AF016272	Homo sapiens	Ksp-cadherin	4263	99
48	R13111	Homo sapiens	1B1 IgG aberrant light chain with duplicated variable region.	1000	92
49	AK001636	Homo sapiens	unnamed protein product	1630	97
50	Y65155	Homo sapiens	Human 5' EST related polypeptide SEQ ID NO:1316.	78	34
51	G00471	Homo sapiens	Human secreted protein, SEQ ID NO: 4552.	281	91
52	AJ272050	Homo sapiens	transcription initiation factor IA protein	165	68
53	Y42388	Homo sapiens	Amino acid sequence of pt127_1.	668	73
54	AF193807	Homo sapiens	Rh type B glycoprotein	248	97
55	AF132611	Homo sapiens	monocarboxylate transporter MCT3	139	37
56	U43940	Rattus norvegicus	focal adhesion kinase	141	84
57	L17318	Rattus norvegicus	proline-rich proteoglycan	124	37
58	G02832	Homo sapiens	Human secreted protein, SEQ ID NO: 6913.	132	48
59	G00357	Homo sapiens	Human secreted protein, SEQ ID NO: 4438.	95	64
60	Y12723	Homo sapiens	Human 5' EST secreted protein SEQ ID NO:313.	91	50
61	Y19450	Homo sapiens	Amino acid sequence of a human secreted	406	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			protein.		
62	AF156549	Mus musculus	putative E1-E2 ATPase	876	65
63	AL356276	Homo sapiens	bA367J7.5 (novel Immunoglobulin domain containing protein)	655	84
64	AL133105	Homo sapiens	hypothetical protein	1783	99
65	U32189	Oryctolagus cuniculus	histidine-rich glycoprotein precursor	73	40
66	Y91433	Homo sapiens	Human secreted protein sequence encoded by gene 33 SEQ ID NO:154.	758	98
67	W75198	Homo sapiens	Human secreted protein encoded by gene 3 clone HCED084.	208	100
68	AF020651	Homo sapiens	T cell receptor alpha chain variable region	742	93
69	AF118086	Homo sapiens	PRO1992	158	61
70	X52454	Drosophila melanogaster	rho	224	36
71	W40353	Homo sapiens	Human unspecified protein from US5702907.	146	67
72	Y66690	Homo sapiens	Membrane-bound protein PRO813.	971	98
73	AJ002744	Homo sapiens	UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase 7	1518	98
74	AC024792	Caenorhabditis elegans	contains similarity to TR:P78316	423	36
75	AB016088	Homo sapiens	RNA binding protein	109	32
76	Y94953	Homo sapiens	Human secreted protein clone fy356_14 protein sequence SEQ ID NO:112.	2484	100
77	AF107406	Homo sapiens	GW128	74	51
78	Y13401	Homo sapiens	Amino acid sequence of protein PRO339.	1681	96
79	Y94290	Homo sapiens	Human myosin heavy chain homologue.	1819	99
80	AF007194	Homo sapiens	mucin	4875	100
81	AF229179	Homo sapiens	kidney-specific membrane protein NX-17	949	99

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
82	AL356173	Neurospora crassa	hypothetical protein	83	29
83	G00437	Homo sapiens	Human secreted protein, SEQ ID NO: 4518.	87	69
84	K03036	Mus musculus	alpha-1 type I procollagen	114	38
85	AF233261	Homo sapiens	otoraplin	676	100
86	AF073519	Homo sapiens	small EDRK-rich factor 1, long isoform	100	45
87	AC021640	Arabidopsis thaliana	putative phosphatidate phosphohydrolase	387	43
88	AB040812	Homo sapiens	protein kinase PAK5	1159	100
89	AL365409	Homo sapiens	similar to (NP_034322.1|) sex-determination protein homolog Fem1a	694	100
90	U81035	Rattus norvegicus	ankyrin binding cell adhesion molecule neurofascin	189	63
91	W88684	Homo sapiens	Secreted protein encoded by gene 151 clone HNHED86.	134	65
92	Y66734	Homo sapiens	Membrane-bound protein PRO1097.	297	70
93	AB031051	Homo sapiens	organic anion transporter OATP-E	283	40
94	B08976	Homo sapiens	Human secreted protein sequence encoded by gene 28 SEQ ID NO:133.	71	27
95	U83115	Homo sapiens	non-lens beta gamma-crystallin like protein	245	97
96	AF156551	Mus musculus	putative E1-E2 ATPase	3779	86
97	AF062476	Mus musculus	retinoic acid-responsive protein; STRA6	1091	74
98	Y87072	Homo sapiens	Human secreted protein sequence SEQ ID NO:111.	490	100
99	AF116652	Homo sapiens	PRO0813	1015	99
100	AF159567	Homo sapiens	C2H2 (Kruppel-type) zinc finger protein	2176	100
101	D25328	Homo sapiens	platelet-type phosphofructokinase	109	95
102	AB018563	Homo sapiens	TML1	98	68
103	X83107	Homo sapiens	bmx	232	85

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
104	U49973	Homo sapiens	ORF1; MER37; putative transposase similar to pogo element	131	43
105	Y86472	Homo sapiens	Human gene 52-encoded protein fragment, SEQ ID NO:387.	150	54
106	AF020276	Homo sapiens	spinocerebellar ataxia 7	96	37
107	W57901	Homo sapiens	Protein of clone CT748_2.	1499	96
108	R13111	Homo sapiens	1B1 IgG aberrant light chain with duplicated variable region.	1210	84
109	W50192	Homo sapiens	Amino acid sequence of salivary protein CON-1.	95	32
110	AB046634	Macaca fascicularis	hypothetical protein	282	75
111	AF242432	Mus musculus	neuronal apoptosis inhibitory protein 6	486	29
112	AB000280	Rattus norvegicus	peptide/histidine transporter	2490	88
113	AF182443	Rattus norvegicus	F-box protein FBL2	597	99
114	AJ245874	Homo sapiens	putative ATG/GTP binding protein	1242	100
115	AF179828	Saimiri sciureus	olfactory receptor	444	66
116	Y66735	Homo sapiens	Membrane-bound protein PRO1153.	1006	100
117	Y94344	Homo sapiens	Human cell surface receptor protein #11.	892	90
118	AJ238706	Drosophila melanogaster	monocarboxylate transporter 1 homologue	226	31
119	AF180728	Drosophila melanogaster	sulfate transporter	312	45
120	AE004890	Pseudomonas aeruginosa	L-lactate permease	534	89
121	X91837	Saccharomyces cerevisiae	cell division cycle protein CDC55	435	98
122	U93565	Homo sapiens	putative p150	1911	90
123	AJ000332	Homo sapiens	Glucosidase II	5043	99
124	AF204674	Homo sapiens	muscle disease-related protein	377	72
125	S58722	Homo sapiens	X-linked retinopathy protein {C-terminal, clone	196	68

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			XEH.8c}		
126	S58722	Homo sapiens	X-linked retinopathy protein {C-terminal, clone XEH.8c}	196	68
127	J03848	Mesocricetus auratus	metallothionein II	147	51
128	G02994	Homo sapiens	Human secreted protein, SEQ ID NO: 7075.	93	64
129	AF116238	Homo sapiens	pseudouridine synthase 1	1927	99
130	G03411	Homo sapiens	Human secreted protein, SEQ ID NO: 7492.	183	65
131	AF222861	Sus scrofa	type X collagen	90	34
132	G03628	Homo sapiens	Human secreted protein, SEQ ID NO: 7709.	60	66
133	Y10529	Homo sapiens	olfactory receptor	766	61
134	AF164612	Homo sapiens	Gag protein	125	43
135	Y12713	Mus musculus	Pro-Pol-dUTPase polyprotein	181	47
136	X57816	Homo sapiens	immunoglobulin lambda light chain	550	57
137	U07808	Mus musculus	metallothionein IV	55	37
138	AB031227	Pisum sativum	PsAD1	68	50
139	AB035520	Oryctolagus cuniculus	parchorin	1324	57
140	AB007891	Homo sapiens	KIAA0431	117	46
141	Y00278	Homo sapiens	Human secreted protein encoded by gene 21.	234	92
142	Y68810	Homo sapiens	A rat heavy chain region and a human hinge region.	1124	92
143	M58526	Homo sapiens	alpha-5 type IV collagen	4597	97
144	AF119851	Homo sapiens	PRO1722	192	66
145	X84908	Homo sapiens	phosphorylase kinase	3798	97
146	Y76155	Homo sapiens	Human secreted protein encoded by gene 32.	81	52
147	U13766	Murine leukemia virus	gag-pol polyprotein	735	36
148	AF034198	Homo sapiens	IGSF1	7154	100
149	Y94343	Homo sapiens	Human cell surface receptor protein #10.	1331	100
150	Y87211	Homo sapiens	Human secreted	759	97

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			protein sequence SEQ ID NO:250.		
151	AJ252258	human herpesvirus 2	glycoprotein G-2	115	30
152	V00662	Homo sapiens	URF 1 (NADH dehydrogenase subunit)	1283	85
153	G02872	Homo sapiens	Human secreted protein, SEQ ID NO: 6953.	142	61
154	A23786	Beta vulgaris	chitinase 1	138	41
155	Z34465	Zea mays	extensin-like protein	97	36
156	X79389	Homo sapiens	glutathione transferase T1	721	66
157	M22333	Homo sapiens	unknown protein	106	46
158	AL118502	Homo sapiens	bA371L19.1 (novel protein)	2471	100
159	AJ012582	Homo sapiens	hyperpolarization-activated cation channel HCN2	3076	100
160	D26351	Homo sapiens	human type 3 inositol 1,4,5-trisphosphate receptor	8901	99
161	AF067656	Homo sapiens	ZW10 interactor Zwint	951	97
162	AE003461	Drosophila melanogaster	CG11300 gene product	76	29
163	Y48518	Homo sapiens	Human breast tumour-associated protein 63.	355	100
164	G00517	Homo sapiens	Human secreted protein, SEQ ID NO: 4598.	83	34
165	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	251	53
166	Y00765	Homo sapiens	Prion protein CJAS.	63	37
167	Y21050	Homo sapiens	Human glial fibrillary acidic protein GFAP mutant fragment 59.	206	71
168	X74929	Homo sapiens	Keratin 8	1462	95
169	U29488	Caenorhabditis elegans	similar to DNAJ protein	555	29
170	L27428	Homo sapiens	reverse transcriptase	145	45
171	W19932	Homo sapiens	Alzheimer's disease protein encoded by DNA from plasmid pGCS55.	362	100
172	AF178983	Homo sapiens	Ras-associated	497	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			protein Rap1		
173	U70136	Homo sapiens	megakaryocyte stimulating factor; MSF	206	28
174	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	109	64
175	U28143	Gallus gallus	synemin	1014	39
176	Y13401	Homo sapiens	Amino acid sequence of protein PRO339.	1978	96
177	AJ243396	Homo sapiens	voltage-gated sodium channel beta-3 subunit	947	99
178	M77812	Oryctolagus cuniculus	myosin heavy chain	4079	98
179	AF200344	Homo sapiens	aspartyl protease 3	956	91
180	AF200815	Homo sapiens	FUSED serine/threonine kinase	1597	99
181	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	147	83
182	Y00313	Homo sapiens	Human secreted protein encoded by gene 56.	56	29
183	X00699	Homo sapiens	precursor	583	66
184	AF269289	Homo sapiens	unknown	81	32
185	G03797	Homo sapiens	Human secreted protein, SEQ ID NO: 7878.	176	66
186	Y20298	Homo sapiens	Human apolipoprotein E mutant protein fragment 11.	110	34
187	AF161437	Homo sapiens	HSPC319	867	99
188	Y19684	Homo sapiens	SEQ ID NO 402 from WO9922243.	124	47
189	Y74050	Homo sapiens	Human prostate tumor EST fragment derived protein #237.	78	42
190	Y08986	Brassica napus	oleosin-like protein	106	36
191	AF119851	Homo sapiens	PRO1722	173	66
192	AF116712	Homo sapiens	PRO2738	166	50
193	AF186084	Homo sapiens	epidermal growth factor repeat containing protein	2022	85
194	M59819	Homo sapiens	granulocyte colony-stimulating factor receptor	4232	100
195	Y86228	Homo sapiens	Human secreted protein HFXJX44,	250	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			SEQ ID NO:143.		
196	Y45382	Homo sapiens	Human secreted protein fragment encoded from gene 28.	181	63
197	X94991	Homo sapiens	zyxin	566	41
198	M17236	Homo sapiens	MHC HLA-DQ alpha precursor	896	84
199	AC004659	Homo sapiens	BC62940_2	805	53
200	X14420	Homo sapiens	prepro-alpha-1 type 3 collagen	5521	99
201	AF180473	Homo sapiens	Not2p	1628	98
202	X85237	Homo sapiens	human splicing factor	1145	100
203	AL390114	Leishmania major	extremely cysteine/valine rich protein	309	58
204	D42138	Homo sapiens	PIG-B	1479	98
205	Y00062	Homo sapiens	precursor polypeptide (AA -23 to 1120)	3334	98
206	W93946	Homo sapiens	Human regulatory molecule HRM-2 protein.	1011	100
207	AB017563	Homo sapiens	IGSF4	2062	99
208	X54637	Homo sapiens	protein tyrosine kinase	5694	98
209	AF255910	Homo sapiens	vascular endothelial junction-associated molecule	1508	98
210	AF061324	Homo sapiens	sulfonylurea receptor 2A	7545	97
211	U93568	Homo sapiens	p40	197	50
212	AF250842	Drosophila melanogaster	multiple asters	506	32
213	X81479	Homo sapiens	EMR1	4469	99
214	X77748	Homo sapiens	metabotropic glutamate receptor type 3 (mGluR3)	4471	99
215	M60396	Homo sapiens	transcobalamin II	2218	99
216	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	170	71
217	Y36203	Homo sapiens	Human secreted protein #75.	156	73
218	AF119851	Homo sapiens	PRO1722	144	63
219	AJ246002	Mus musculus	spastin protein orthologue	143	100
220	D49958	Homo sapiens	membrane glycoprotein M6	616	57
221	X83573	Homo sapiens	ARSE	2114	93

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SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
222	AF126062	Homo sapiens	Arf-like 2 binding protein BART1	508	84
223	L22695	Canine oral papillomavirus	5' end derived by splicing; putative	83	51
224	R95913	Homo sapiens	Neural thread protein.	262	64
225	AP001306	Arabidopsis thaliana	contains similarity to cell wall-plasma membrane linker protein~gene_id:MKA 23.3	79	34
226	G01984	Homo sapiens	Human secreted protein, SEQ ID NO: 6065.	252	64
227	X04614	human herpesvirus 1	IE110	83	35
228	AF151877	Homo sapiens	CGI-119 protein	1203	94
229	AF181467	Homo sapiens	protein Z-dependent protease inhibitor precursor	1483	88
230	Z81326	Homo sapiens	neuroserpin	1763	99
231	AF111173	Homo sapiens	sodium/hydrogen exchanger isoform 5	3512	99
232	X67055	Homo sapiens	inter-alpha-trypsin inhibitor heavy chain H3	4429	98
233	AB004064	Homo sapiens	tomoregulin	1783	98
234	AL096772	Homo sapiens	dJ365O12.1 (KIAA0758 protein)	5465	98
235	X83378	Homo sapiens	putative chloride channel	1620	99
236	AF043644	Homo sapiens	receptor protein tyrosine phosphatase	5127	97
237	AF208536	Homo sapiens	nucleotide binding protein; NBP	1372	100
238	AC005625	Homo sapiens	R27328_1	2435	93
239	X55687	Lycopersicon esculentum	extensin (class II)	58	50
240	M23315	Sesbania rostrata	nodulin	61	36
241	AF102851	Homo sapiens	dolichyl-P-Glc:Man9GlcNAc2-PP-dolichyl glucosyltransferase	1881	99
242	G03793	Homo sapiens	Human secreted protein, SEQ ID NO: 7874.	202	67
243	G03258	Homo sapiens	Human secreted protein, SEQ ID NO: 7339.	203	69
244	AF048774	Homo sapiens	anti-HER3 scFv	903	81

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
245	AF102851	Homo sapiens	dolichyl-P-Glc:Man9GlcNAc2-PP-dolichyl glucosyltransferase	1867	98
246	L00352	Homo sapiens	low density lipoprotein receptor	3980	100
247	Y79510	Homo sapiens	Human carbohydrate-associated protein CRBAP-6.	1394	100
248	AF202636	Homo sapiens	angiopoietin-like protein PP1158	2164	100
249	X66533	Homo sapiens	guanylate cyclase	1641	97
250	M20504	Homo sapiens	MHC HLA-DR-beta-2 precursor	750	70
251	AF157326	Homo sapiens	TIP120 protein	4278	99
252	M25865	Homo sapiens	von Willebrand factor	10841	95
253	AC005625	Homo sapiens	R27328_1	2435	93
254	A21385	synthetic construct	heavy chain antibody 3D6	1786	94
255	AF182414	Homo sapiens	MDS013	310	48
256	Y54041	Homo sapiens	Protein enc0ded by a gene reduced in metastatic melanoma cells (grmm-1).	1267	84
257	AJ011415	Homo sapiens	plexin-B1/SEP receptor	1580	60
258	W55030	Homo sapiens	G-protein coupled receptor, long form.	1493	100
259	AF227747	Homo sapiens	voltage-dependent calcium channel alpha 1G subunit isoform bc	6158	100
260	AF111173	Homo sapiens	sodium/hydrogen exchanger isoform 5	3512	99
261	G01984	Homo sapiens	Human secreted protein, SEQ ID NO: 6065.	175	70
262	Y00815	Homo sapiens	put. LAR preprotein (AA -16 to 1881)	5648	100
263	Z34979	Homo sapiens	Human FIZZ3 (inhibitor of neurotrophin action) cDNA.	582	100
264	AF119851	Homo sapiens	PRO1722	189	73
265	AL049798	Homo sapiens	dJ797M17.1 (Dermatopontin)	1007	99
266	AL035684	Homo sapiens	dJ1114A1.1 (KIAA0611 (putative E1-E2 ATPase) protein)	1978	99

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
267	U49055	Rattus norvegicus	rA8	4382	87
268	X15332	Homo sapiens	alpha-1 (III) collagen	4170	99
269	Z98884	Homo sapiens	dJ467L1.1 (KIAA0833)	2010	100
270	AF085244	Homo sapiens	C2H2 type Kruppel-like zinc finger protein splice variant b	7331	98
271	Y00319	Homo sapiens	Human secreted protein encoded by gene 63.	214	82
272	X04434	Homo sapiens	IGF-I receptor	5832	99
273	AC005626	Homo sapiens	R29124_1	1129	89
274	X52046	Mus musculus	type III collagen	819	37
275	M22207	Tripneustes gratilla	217g protein	168	51
276	M32317	Homo sapiens	HLA protein allele B7	1536	84
277	L05485	Homo sapiens	surfactant protein D	1693	87
278	W88504	Homo sapiens	Human epidermoid carcinoma clone HP10428-encoded membrane protein.	1187	100
279	AF078850	Homo sapiens	steroid dehydrogenase homolog	794	100
280	X83378	Homo sapiens	putative chloride channel	1620	99
281	AL035701	Homo sapiens	dJ8B1.3 (similar to PLASMA-CELL MEMBRANE GLYCOPROTEIN PC-1)	2412	99
282	Y87068	Homo sapiens	Human secreted protein sequence SEQ ID NO:107.	528	100
283	L40806	Neurospora crassa	Restriction enzyme inactivation of met-10 complementation in this region. Sequence similarity to S. cerevisiae chromosome VIII cosmid 9205, accession no. U10556 CDS residues 22627-24126	536	35
284	W88552	Homo sapiens	Secreted protein encoded by gene 19 clone HSAVU34.	3078	99

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
285	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	108	50
286	X68060	Homo sapiens	DNA topoisomerase II	8296	99
287	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	114	41
288	AC004602	Homo sapiens	F23487_2	202	49
289	AF196329	Homo sapiens	triggering receptor expressed on monocytes 1	1211	99
290	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	202	62
291	G03043	Homo sapiens	Human secreted protein, SEQ ID NO: 7124.	93	62
292	Y12550	Homo sapiens	Human 5' EST secreted protein SEQ ID NO: 215 from WO 9906553.	141	100
293	D43756	Canis familiaris	fibrinogen A-alpha-chain	102	33
294	U38545	Homo sapiens	phospholipase D1	5681	99
295	W42076	Homo sapiens	The amino acid sequence of the O276_16 protein.	236	100
296	AF090930	Homo sapiens	PRO0478	128	60
297	Y64747	Homo sapiens	Human 5' EST related polypeptide SEQ ID NO:908.	471	98
298	G01234	Homo sapiens	Human secreted protein, SEQ ID NO: 5315.	280	71
299	G02514	Homo sapiens	Human secreted protein, SEQ ID NO: 6595.	94	76
300	G02493	Homo sapiens	Human secreted protein, SEQ ID NO: 6574.	112	46
301	Z38061	Saccharomyces cerevisiae	mal5, sta1, len: 1367, CAI: 0.3, AMYH_YEAST P08640 GLUCOAMYLASE S1 (EC 3.2.1.3)	340	27
302	Y59672	Homo sapiens	Secreted protein 108-006-5-0-E6-FL.	530	78
303	Y95018	Homo sapiens	Human secreted protein vp19_1, SEQ ID NO:76.	76	35
304	W34623	Homo sapiens	Human C3 protein mutant FT-1.	117	46

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
305	Y87292	Homo sapiens	Human signal peptide containing protein HSPP-69 SEQ ID NO:69.	81	50
306	AF210651	Homo sapiens	NAG18	135	60
307	Y14482	Homo sapiens	Fragment of human secreted protein encoded by gene 17.	212	58
308	Y76325	Homo sapiens	Fragment of human secreted protein encoded by gene 35.	343	93
309	Y36156	Homo sapiens	Human secreted protein #28.	203	75
310	AF090931	Homo sapiens	PRO0483	76	50
311	AC004943	Homo sapiens	alpha-fetoprotein enhancer-binding protein; 99% identical to A41948 (PID:g283975)	351	85
312	G02558	Homo sapiens	Human secreted protein, SEQ ID NO: 6639.	144	52
313	AK000128	Homo sapiens	unnamed protein product	1338	100
314	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	164	83
315	AF090942	Homo sapiens	PRO0657	253	68
316	AF116712	Homo sapiens	PRO2738	181	52
317	AF043726	Mus musculus	PHD-finger protein	1605	64
318	Y99368	Homo sapiens	Human PRO1326 (UNQ686) amino acid sequence SEQ ID NO:100.	145	51
319	AF065314	Homo sapiens	cone photoreceptor cGMP-gated channel alpha subunit	292	98
320	AF003389	Caenorhabditis elegans	contains similarity to N-chimaerins	162	28
321	Y66755	Homo sapiens	Membrane-bound protein PRO1185.	993	100
322	AF109906	Mus musculus	RD	118	69
323	AF199323	Rattus norvegicus	RIM2-2A	364	85
324	G02538	Homo sapiens	Human secreted protein, SEQ ID NO: 6619.	104	65
325	G02872	Homo sapiens	Human secreted protein, SEQ ID NO: 6953.	138	65
326	Y41266	Homo sapiens	Human T139 protein.	591	100
327	G02920	Homo sapiens	Human secreted protein, SEQ ID NO:	103	67

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			7001.		
328	G00636	Homo sapiens	Human secreted protein, SEQ ID NO: 4717.	80	36
329	U37769	Oryctolagus cuniculus	protein phosphatase 2A0 B' regulatory subunit alpha isoform	556	88
330	AE001424	Plasmodium falciparum	RESA-H3 antigen	208	21
331	AF090930	Homo sapiens	PRO0478	156	82
332	AF161356	Homo sapiens	HSPC093	169	64
333	G04055	Homo sapiens	Human secreted protein, SEQ ID NO: 8136.	425	100
334	D79985	Homo sapiens	putative hydrophobic domain in the central region.	371	86
335	Y41401	Homo sapiens	Human secreted protein encoded by gene 94 clone HLYCH68.	392	100
336	W18651	Homo sapiens	Human apolipoprotein E gene +1 frameshift mutant product.	478	88
337	Y20921	Homo sapiens	Human presenilin II wild type protein fragment 5.	2126	96
338	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	233	75
339	D28500	Homo sapiens	mitochondrial isoleucine tRNA synthetase	175	89
340	Y13357	Homo sapiens	Amino acid sequence of protein PRO227.	148	50
341	AL096677	Homo sapiens	dJ322G13.2 (similar to cystatin)	94	50
342	Y10843	Homo sapiens	Amino acid sequence of a human secreted protein.	186	86
343	X54134	Homo sapiens	protein-tyrosine phosphatase	3705	100
344	Z33908	Mus musculus	inositol 1,4,5-trisphosphate receptor	315	84
345	G00241	Homo sapiens	Human secreted protein, SEQ ID NO: 4322.	130	46
346	AF071172	Homo sapiens	HERC2	23705	99
347	AB015346	Homo sapiens	Eps15R	209	95
348	Y48596	Homo sapiens	Human breast	108	34

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			tumour-associated protein 57.		
349	G03058	Homo sapiens	Human secreted protein, SEQ ID NO: 7139.	85	66
350	Y73443	Homo sapiens	Human secreted protein clone yb187_1 protein sequence SEQ ID NO:108.	90	36
351	G03793	Homo sapiens	Human secreted protein, SEQ ID NO: 7874.	126	66
352	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	324	73
353	Y64747	Homo sapiens	Human 5' EST related polypeptide SEQ ID NO:908.	527	98
354	AF255342	Homo sapiens	putative pheromone receptor V1RL1 long form	147	59
355	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	85	61
356	G03060	Homo sapiens	Human secreted protein, SEQ ID NO: 7141.	191	72
357	AF124729	Mus musculus	acinusS'	124	31
358	U37352	Homo sapiens	protein phosphatase 2A B'alpha1 regulatory subunit	1016	95
359	AF280605	Triticum aestivum	omega gliadin storage protein	125	35
360	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	150	81
361	AL035398	Homo sapiens	dJ796I17.2 (CGI-51)	226	64
362	AK000307	Homo sapiens	unnamed protein product	882	97
363	Y41401	Homo sapiens	Human secreted protein encoded by gene 94 clone HLYCH68.	392	100
364	AF288480	Homo sapiens	tubby super-family protein	238	87
365	AL023706	Schizosaccharomyces pombe	possible pre-mRNA processing by similarity to yeast prp39	383	34
366	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	85	61

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
367	S68978	Oryctolagus cuniculus	interleukin-1 receptor antagonist intracellular form	53	58
368	AF047602	Equus zebra hartmannae	luteinizing hormone/chorionic gonadotrophin beta-subunit	68	37
369	AF119851	Homo sapiens	PRO1722	180	75
370	U15195	Homo sapiens	alpha-1 type II collagen	59	43
371	U02082	Homo sapiens	guanine nucleotide regulatory protein	2648	100
372	AF096895	Homo sapiens	chemokine-like factor 1	508	100
373	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	315	65
374	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	240	67
375	U22376	Homo sapiens	alternatively spliced product using exon 13A	191	80
376	U08310	Saimiri sciureus	prion protein	245	66
377	A76867	unidentified	Chimere G.CSF-Gly4-SAH en aval region prepro de SAH	550	99
378	G00442	Homo sapiens	Human secreted protein, SEQ ID NO: 4523.	94	53
379	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	355	53
380	AB023634	Rattus norvegicus	Ca/calmodulin-dependent protein kinase phosphatase	161	91
381	Y99437	Homo sapiens	Human PRO1508 (UNQ761) amino acid sequence SEQ ID NO:336.	805	100
382	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	139	61
383	M58511	Homo sapiens	iron-responsive element-binding protein/iron regulatory protein 2	286	100
384	Y02671	Homo sapiens	Human secreted protein encoded by gene 22 clone HMSJW18.	99	71
385	AJ012166	Canis familiaris	brain-specific synapse associated	86	38

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			protein, Bassoon		
386	L07809	Homo sapiens	dynamin	98	31
387	M15530	Homo sapiens	B-cell growth factor	158	69
388	AF090172	Mycoplasma pneumoniae	revertant adhesin-related protein P30	109	31
389	AJ278964	Homo sapiens	cytosolic beta-glucosidase	165	52
390	AF190642	Homo sapiens	phosphoinositide-specific phospholipase C PLC-epsilon	1095	98
391	X13238	Homo sapiens	cytochrome c oxidase subunit VIc preprotein	379	100
392	AF225417	Homo sapiens	88.8 kDa protein	1634	98
393	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	278	75
394	AF151037	Homo sapiens	HSPC203	554	100
395	AJ276396	Homo sapiens	matrix extracellular phosphoglycoprotein	465	100
396	X51405	Homo sapiens	pre-pro polypeptide (AA -25 to 451)	2536	100
397	W78128	Homo sapiens	Human secreted protein encoded by gene 3 clone HOSBI96.	564	71
398	Y87346	Homo sapiens	Human signal peptide containing protein HSPP-123 SEQ ID NO:123.	290	90
399	G03564	Homo sapiens	Human secreted protein, SEQ ID NO: 7645.	72	52
400	U89436	Homo sapiens	tyrosyl-tRNA synthetase	2719	100
401	W80993	Homo sapiens	Human RIP-interacting factor RIF.	1724	100
402	Y27907	Homo sapiens	Human secreted protein encoded by gene No. 119.	95	59
403	AB033102	Homo sapiens	KIAA1276 protein	921	100
404	G03797	Homo sapiens	Human secreted protein, SEQ ID NO: 7878.	192	55
405	AF096895	Homo sapiens	chemokine-like factor 1	508	100
406	Y29861	Homo sapiens	Human secreted protein clone	791	98

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			cb98_4.		
407	Y00293	Homo sapiens	Human secreted protein encoded by gene 36.	237	97
408	W40215	Homo sapiens	Human macrophage antigen.	1358	99
409	L36056	Homo sapiens	4E-binding protein 2	639	100
410	AJ130710	Homo sapiens	QA79 membrane protein, allelic variant airm-1b	2473	100
411	AF116661	Homo sapiens	PRO1438	146	57
412	W88761	Homo sapiens	Polypeptide fragment encoded by gene 19.	150	58
413	AK024434	Homo sapiens	FLJ00024 protein	574	97
414	Y10376	Homo sapiens	SIRP-beta1	2069	99
415	Y07930	Homo sapiens	Human secreted protein fragment encoded from gene 79.	351	98
416	R99390	Homo sapiens	Human 030 gene (fohy030) product.	804	71
417	AB018253	Rattus norvegicus	voltage-gated ca channel	2419	88
418	AC006017	Homo sapiens	similar to ALR; similar to AAC51735 (PID:g2358287)	2150	97
419	X72925	Homo sapiens	Dsc1b precursor	4390	99
420	AF205940	Homo sapiens	endomucin	1289	100
421	Y27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	134	54
422	W74722	Homo sapiens	Human secreted protein er80_1.	2422	100
423	AF080470	Homo sapiens	pallid	872	100
424	G04072	Homo sapiens	Human secreted protein, SEQ ID NO: 8153.	201	63
425	W90961	Homo sapiens	Human CSGP-I protein.	869	86
426	M13180	Human herpesvirus 4	nuclear antigen (EBNA 1)	59	45
427	G00365	Homo sapiens	Human secreted protein, SEQ ID NO: 4446.	99	75
428	AF155819	Mus musculus	doublecortin-like kinase	3448	96
429	Y04315	Homo sapiens	Human secreted protein encoded by gene 23.	385	100
430	AB026891	Homo sapiens	cystine/glutamate transporter	2552	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
431	Y15286	Homo sapiens	vacuolar proton-ATPase subunit M9.2	459	100
432	X81053	Homo sapiens	type IV collagen alpha 4 chain	9706	99
433	U41829	Macaca mulatta	MHC class I antigen Mamu B*07	365	76
434	G03371	Homo sapiens	Human secreted protein, SEQ ID NO: 7452.	100	41
435	AF233238	Gallus gallus	BMP signal transducer Smad1	170	74
436	X52425	Homo sapiens	interleukin 4 receptor	4492	99
437	Y06115	Homo sapiens	Human organic cation transporter OCT-3.	2593	96
438	G02872	Homo sapiens	Human secreted protein, SEQ ID NO: 6953.	130	54
439	L08239	Homo sapiens	located at OATL1	1304	95
440	X17115	Homo sapiens	precursor (AA -15 to 612)	2613	86
441	Y06816	Homo sapiens	Human Notch2 (humN2) protein sequence.	1471	98
442	AB019440	Homo sapiens	immunogloblin heavy chain variable region	545	88
443	Y87350	Homo sapiens	Human signal peptide containing protein HSPP-127 SEQ ID NO:127.	1061	100
444	AJ271736	Homo sapiens	synaptobrevin-like 1 protein	1128	100
445	Y11534	Homo sapiens	PEG1/MEST	1787	100
446	W85719	Homo sapiens	Novel protein (Clone AJ143_1).	271	100
447	Y07900	Homo sapiens	Human secreted protein fragment encoded from gene 49.	87	94
448	X14329	Homo sapiens	carboxypeptidase N precursor (AA -20 to 438)	2463	99
449	M36803	Homo sapiens	hemopexin	2603	100
450	AF116238	Homo sapiens	pseudouridine synthase 1	1927	99
451	AB031051	Homo sapiens	organic anion transporter OATP-E	444	42
452	X16841	Homo sapiens	precursor protein (-19 to 742)	3958	100
453	AK022830	Homo sapiens	unnamed protein product	373	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
454	Y94890	Homo sapiens	Human protein clone HP02798.	637	90
455	AL356014	Arabidopsis thaliana	putative protein	210	38
456	X60221	Homo sapiens	H+-ATP synthase subunit b	1297	99
457	G02532	Homo sapiens	Human secreted protein, SEQ ID NO: 6613.	168	69
458	AJ245375	Homo sapiens	PP35 act	1895	99
459	G00397	Homo sapiens	Human secreted protein, SEQ ID NO: 4478.	57	52
460	AE003708	Drosophila melanogaster	CG6194 gene product	234	65
461	W48352	Homo sapiens	Human breast cancer related protein BCFLT1.	80	60
462	U53420	Rattus norvegicus	sodium-calcium exchanger form 3	397	76
463	Y13402	Homo sapiens	Amino acid sequence of protein PRO310.	1075	63
464	Y27607	Homo sapiens	Human secreted protein encoded by gene No. 41.	610	100
465	L08666	Homo sapiens	porin	122	51
466	Y87084	Homo sapiens	Human secreted protein sequence SEQ ID NO:123.	232	78
467	X16841	Homo sapiens	precursor protein (-19 to 742)	3958	100
468	Y48507	Homo sapiens	Human breast tumour-associated protein 52.	295	91
469	X07973	Ovis aries	MT-Ib protein	84	45
470	W48927	Homo sapiens	Schwannomin-binding protein C-terminal fragment.	78	60
471	AJ224171	Homo sapiens	lipophilin A	454	100
472	G01984	Homo sapiens	Human secreted protein, SEQ ID NO: 6065.	211	64
473	G03793	Homo sapiens	Human secreted protein, SEQ ID NO: 7874.	200	74
474	Y17829	Homo sapiens	Human PRO354 protein sequence.	1006	100
475	Y66706	Homo sapiens	Membrane-bound protein PRO1129.	2153	99
476	G03800	Homo sapiens	Human secreted protein, SEQ ID NO: 7881.	99	78
477	AF216389	Homo sapiens	semaphorin Rs	296	85

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
478	X93036	Homo sapiens	MAT8 protein	469	100
479	X53795	Homo sapiens	inducible membrane protein	1412	100
480	AF056195	Homo sapiens	neuroblastoma-amplified protein	4504	98
481	AF116715	Homo sapiens	PRO2829	96	46
482	Z24680	Homo sapiens	garp	167	43
483	Y76198	Homo sapiens	Human secreted protein encoded by gene 75.	82	80
484	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	324	59
485	Y91592	Homo sapiens	Human secreted protein sequence encoded by gene 6 SEQ ID NO:265.	738	100
486	Y94890	Homo sapiens	Human protein clone HP02798.	605	81
487	U89436	Homo sapiens	tyrosyl-tRNA synthetase	2719	100
488	W88579	Homo sapiens	Secreted protein encoded by gene 46 clone HCFMV39.	479	95
489	G02360	Homo sapiens	Human secreted protein, SEQ ID NO: 6441.	102	70
490	U70976	Homo sapiens	arrestin	1071	61
491	U80746	Homo sapiens	CAGH4	277	81
492	U26361	Helicobacter pylori	Hpn	80	83
493	Y19730	Homo sapiens	SEQ ID NO 448 from WO9922243.	135	53
494	Y27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	185	50
495	AF090901	Homo sapiens	PRO0195	90	46
496	AF061529	Mus musculus	rjs	270	76
497	L34049	Rattus norvegicus	megalin	322	41
498	J04204	Bos taurus	32 kd accessory protein	1743	100
499	Y71118	Homo sapiens	Human Hydrolase protein-16 (HYDRL-16).	2205	97
500	X13916	Homo sapiens	LDL-receptor related precursor (AA -19 to 4525)	715	92
501	Y00877	Homo sapiens	Human LAPH-2 protein sequence.	138	40
502	Y99368	Homo sapiens	Human PRO1326 (UNQ686) amino acid sequence SEQ ID NO:100.	156	48

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
503	Y48308	Homo sapiens	Human prostate cancer-associated protein 5.	901	100
504	U67060	Cricetulus griseus	SREBP cleavage activating protein	6196	92
505	W75857	Homo sapiens	Human secretory protein of clone CO1020-1.	1761	99
506	X55764	Homo sapiens	11beta-hydrolase precursor	2604	99
507	Y41685	Homo sapiens	Human PRO213 protein sequence.	1344	94
508	X95240	Homo sapiens	cysteine-rich secretory protein-3	1368	100
509	AF065482	Homo sapiens	sorting nexin 2	517	77
510	AF135025	Homo sapiens	kallikrein-like protein 5-related protein 1	1301	100
511	AF220492	Homo sapiens	krueppel-like zinc finger protein HZF2	4100	99
512	X58397	Homo sapiens	variable region V251 from V(H)5 gene	670	100
513	W95348	Homo sapiens	Human foetal kidney secreted protein em397_2.	406	90
514	AJ000479	Homo sapiens	putative G-Protein coupled receptor, EDG6	1966	100
515	L05514	Homo sapiens	histatin 3	280	100
516	X95240	Homo sapiens	cysteine-rich secretory protein-3	1368	100
517	D00654	Homo sapiens	enteric smooth muscle gamma-actin	1972	100
518	AJ005453	Mytilus edulis	metallothionein 10 II	94	35
519	W37864	Homo sapiens	Human protein comprising secretory signal amino acid sequence 1.	362	98
520	X76091	Homo sapiens	DNA binding protein RFX2	3743	99
521	G03800	Homo sapiens	Human secreted protein, SEQ ID NO: 7881.	113	39
522	AJ289243	Mus musculus	calpain 12	147	53
523	D30037	Homo sapiens	phosphatidylinositol transfer protein	1464	100
524	AJ012370	Homo sapiens	NAALADase II protein	3872	99
525	G03909	Homo sapiens	Human secreted protein, SEQ ID NO:	80	41

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			7990.		
526	U67060	Cricetulus griseus	SREBP cleavage activating protein	6196	92
527	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	85	61
528	AF093408	Homo sapiens	protein kinase A binding protein AKAP110	461	78
529	Y92182	Homo sapiens	Human partial TANGO 195 from clone T195Athpb93f1.	1682	100
530	M28200	Homo sapiens	MHC class II lymphocyte antigen beta chain	432	72
531	X58397	Homo sapiens	variable region V251 from V(H)5 gene	491	74
532	D88577	Mus musculus	Kupffer cell receptor	904	46
533	M84379	Homo sapiens	lymphocyte antigen	1922	97
534	AF279265	Homo sapiens	putative anion transporter 1	212	91
535	AF132035	Homo sapiens	core 2 beta-1,6-N-acetylglucosaminyltransferase 3	852	92
536	G02958	Homo sapiens	Human secreted protein, SEQ ID NO: 7039.	512	98
537	Y07938	Homo sapiens	Human secreted protein fragment encoded from gene 87.	302	100
538	Y36203	Homo sapiens	Human secreted protein #75.	175	51
539	U16738	Homo sapiens	CAG-isl 7	472	75
540	AL161531	Arabidopsis thaliana	putative proline-rich protein	118	57
541	K00558	Homo sapiens	alpha-tubulin	2393	100
542	U20286	Rattus norvegicus	lamina associated polypeptide 1C	641	55
543	Y27907	Homo sapiens	Human secreted protein encoded by gene No. 119.	128	61
544	AF109674	Rattus norvegicus	late gestation lung protein 1	954	87
545	L35278	Homo sapiens	bone morphogenetic protein	92	40
546	G00541	Homo sapiens	Human secreted protein, SEQ ID NO: 4622.	94	68
547	AF190664	Mus musculus	LMBR2	246	78
548	Y12793	Homo sapiens	Human 5' EST	113	50

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			secreted protein SEQ ID NO:383.		
549	AF133816	Homo sapiens	insulin-like peptide INSL5	714	100
550	X70910	Homo sapiens	tetranectin	1069	100
551	M11902	Mus musculus	proline-rich salivary protein	135	39
552	G03477	Homo sapiens	Human secreted protein, SEQ ID NO: 7558.	89	58
553	U63542	Homo sapiens	FAP protein	156	77
554	Y60497	Homo sapiens	Human normal bladder tissue EST encoded protein 169.	89	50
555	Y87303	Homo sapiens	Human signal peptide containing protein HSPP-80 SEQ ID NO:80.	275	100
556	Y17526	Homo sapiens	Human secreted protein clone AM349 2 protein.	1220	100
557	G04064	Homo sapiens	Human secreted protein, SEQ ID NO: 8145.	83	35
558	U51919	Rattus norvegicus	preprocortistatin	84	36
559	AF090901	Homo sapiens	PRO0195	92	66
560	J04031	Homo sapiens	MDMCSF (EC 1.5.1.5; EC 3.5.4.9; EC 6.3.4.3)	226	52
561	AL117237	Homo sapiens	hypothetical protein	4088	94
562	Y50931	Homo sapiens	Human fetal brain cDNA clone vc25_1 derived protein.	485	100
563	Y21631	Homo sapiens	Ligand binding domain of nuclear receptor hTRbeta.	1738	99
564	X90857	Homo sapiens	-14	177	69
565	W35904	Homo sapiens	Human haematopoietic-specific protein (HSP).	862	87
566	W99070	Homo sapiens	Human PIGR-1.	244	90
567	X61653	Homo sapiens	TCR V-beta 13.5	600	100
568	AF166350	Homo sapiens	ST7 protein	4711	99
569	Y07938	Homo sapiens	Human secreted protein fragment encoded from gene 87.	302	100
570	X85019	Homo sapiens	UDP-GalNAc:polypeptide	3069	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			N-acetylgalactosaminyl transferase		
571	U89942	Homo sapiens	lysyl oxidase-related protein	2427	89
572	X04391	Homo sapiens	put. precursor polypeptide	2671	99
573	W36903	Homo sapiens	Human epididymis-specific receptor protein.	5352	100
574	U22816	Homo sapiens	LAR-interacting protein 1b	2042	57
575	Y58618	Homo sapiens	Protein regulating gene expression PRGE-11.	729	57
576	AJ278348	Homo sapiens	pregnancy-associated plasma protein-E	743	100
577	AK024512	Homo sapiens	unnamed protein product	471	100
578	AL031685	Homo sapiens	dJ963K23.4 (KIAA0939 (novel Sodium/hydrogen exchanger family member))	2010	100
579	AF183183	Mus musculus	cochlear otoferlin	116	91
580	W74722	Homo sapiens	Human secreted protein er80_1.	2422	100
581	G03356	Homo sapiens	Human secreted protein, SEQ ID NO: 7437.	114	44
582	Y82777	Homo sapiens	Human chordin related protein (Clone dw665_4).	610	98
583	J04988	Homo sapiens	90 kD heat shock protein	3702	100
584	K02576	Homo sapiens	salivary proline-rich protein 1	97	34
585	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	159	72
586	AK024490	Homo sapiens	FLJ00092 protein	204	57
587	U22231	Felis catus	ribosomal protein S3a	327	57
588	X55681	Lycopersicon esculentum	extensin (class I)	96	38
589	U68137	Rana ridibunda	prepro-somatostatin 14	81	33
590	Y19655	Homo sapiens	SEQ ID NO 373 from WO9922243.	814	84
591	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	222	56

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
592	AF067801	Homo sapiens	HDCGC21P	116	38
593	X67339	Neurospora crassa	ccg-2	82	37
594	G03280	Homo sapiens	Human secreted protein, SEQ ID NO: 7361.	169	100
595	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	130	70
596	AE003683	Drosophila melanogaster	CG9492 gene product	247	56
597	Z22968	Homo sapiens	M130 antigen	6205	100
598	AK021847	Homo sapiens	unnamed protein product	178	94
599	AP000060	Aeropyrum pernix	134aa long hypothetical protein	80	39
600	AK001363	Homo sapiens	unnamed protein product	558	92
601	G02872	Homo sapiens	Human secreted protein, SEQ ID NO: 6953.	147	49
602	G02538	Homo sapiens	Human secreted protein, SEQ ID NO: 6619.	149	65
603	X98330	Homo sapiens	ryanodine receptor 2	25918	99
604	AJ243460	Leishmania major	proteophosphoglycan	172	35
605	Y81807	Homo sapiens	Human mahogany protein sequence #2.	2499	63
606	AF041069	Equus caballus	fibronectin	109	56
607	Y54591	Homo sapiens	Amino acid sequence of a human transferase designated HUTRAN-1.	153	77
608	G03172	Homo sapiens	Human secreted protein, SEQ ID NO: 7253.	82	66
609	Y31730	Homo sapiens	Human fused protein kinase-deletion mutant fused C-term.	561	99
610	Y30163	Homo sapiens	Human dorsal root receptor 5 hDRR5.	112	49
611	G03714	Homo sapiens	Human secreted protein, SEQ ID NO: 7795.	171	70
612	U58514	Homo sapiens	chitinase precursor	402	75

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
613	AL122105	Homo sapiens	hypothetical protein	399	73
614	AF059198	Homo sapiens	protein kinase/endoribonulcease	5093	99
615	X17531	Strongylocentrotus purpuratus	epidermal growth factor	234	54
616	AF112982	Homo sapiens	group IID secretory phospholipase A2	852	100
617	AJ006119	Homo sapiens	anti-IFN-G scFv	675	97
618	W54097	Homo sapiens	Homo sapiens B223 sequence.	339	98
619	AF090930	Homo sapiens	PRO0478	141	79
620	W61624	Homo sapiens	Clone HHFEK40 of TM4SF superfamily.	564	98
621	AF119851	Homo sapiens	PRO1722	115	52
622	G03172	Homo sapiens	Human secreted protein, SEQ ID NO: 7253.	173	48
623	Y41379	Homo sapiens	Human secreted protein encoded by gene 72 clone HE6GA29.	261	100
624	U86339	Drosophila grimshawi	expanded	142	36
625	D86853	Catharanthus roseus	extensin	142	39
626	S58722	Homo sapiens	X-linked retinopathy protein {C-terminal, clone XEH.8c}	116	49
627	G02532	Homo sapiens	Human secreted protein, SEQ ID NO: 6613.	108	50
628	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	129	61
629	Y27665	Homo sapiens	Human secreted protein encoded by gene No. 99.	345	100
630	G02837	Homo sapiens	Human secreted protein, SEQ ID NO: 6918.	78	75
631	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	172	65
632	X14329	Homo sapiens	carboxypeptidase N precursor (AA -20 to 438)	2463	99
633	Y87235	Homo sapiens	Human signal peptide containing protein HSPP-12 SEQ	867	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			ID NO:12.		
634	W88627	Homo sapiens	Secreted protein encoded by gene 94 clone HPMBQ32.	106	73
635	W74845	Homo sapiens	Human secreted protein encoded by gene 117 clone HBMUW78.	395	71
636	M16941	Homo sapiens	DR7 beta-chain glycoprotein	1412	100
637	W95634	Homo sapiens	Homo sapiens secreted protein.	1391	100
638	Y78801	Homo sapiens	Hydrophobic domain containing protein clone HP00631 amino acid sequence.	1277	100
639	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	191	76
640	W64535	Homo sapiens	Human leukocyte cell clone HP00804 protein.	2014	99
641	Y94621	Homo sapiens	Epidermal growth factor-like variant in skin-2 amino acid sequence.	529	91
642	G03646	Homo sapiens	Human secreted protein, SEQ ID NO: 7727.	81	42
643	Y87328	Homo sapiens	Human signal peptide containing protein HSPP-105 SEQ ID NO:105.	681	100
644	Y21386	Homo sapiens	Human HUPF-I mutant protein fragment 34.	78	31
645	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	140	55
646	Y35894	Homo sapiens	Extended human secreted protein sequence, SEQ ID NO. 143.	349	100
647	G00517	Homo sapiens	Human secreted protein, SEQ ID NO: 4598.	109	37
648	Y25716	Homo sapiens	Human secreted protein encoded from gene 6.	339	39
649	G01246	Homo sapiens	Human secreted protein, SEQ ID NO: 5327.	152	80
650	R95913	Homo sapiens	Neural thread	233	50

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			protein.		
651	Y91469	Homo sapiens	Human secreted protein sequence encoded by gene 19 SEQ ID NO:142.	98	48
652	G03136	Homo sapiens	Human secreted protein, SEQ ID NO: 7217.	94	43
653	U14635	Caenorhabditis elegans	weak similarity to NADH dehydrogenase	186	30
654	Y14482	Homo sapiens	Fragment of human secreted protein encoded by gene 17.	163	54
655	U14635	Caenorhabditis elegans	weak similarity to NADH dehydrogenase	186	30
656	AB024565	Mus musculus	heparan sulfate 6-sulfotransferase 2	1128	79
657	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	243	70
658	Y14471	Homo sapiens	Fragment of human secreted protein encoded by gene 4.	95	65
659	AF135381	Homo sapiens	chemokine-like factor 3	89	59
660	U40407	synthetic construct	T cell receptor alpha chain	586	100
661	AF039712	Caenorhabditis elegans	contains similarity to CDP-alcohol phosphotransferases	289	43
662	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	113	55
663	AF084467	Homo sapiens	heparanase	170	32
664	AF279890	Homo sapiens	2P domain potassium channel TREK2	1189	94
665	W63693	Homo sapiens	Human secreted protein 13.	243	84
666	AE003908	Xylella fastidiosa	hypothetical protein	120	28
667	B08948	Homo sapiens	Human secreted protein sequence encoded by gene 21 SEQ ID NO:105.	985	89
668	AF023158	Homo sapiens	tyrosine phosphatase	346	64
669	AF169257	Homo sapiens	sodium/calcium exchanger NCKX3	189	57
670	AF132969	Homo sapiens	CGI-35 protein	364	69
671	AF269286	Homo sapiens	HC6	112	50
672	X98494	Homo sapiens	M phase phosphoprotein 10	529	68
673	G03787	Homo sapiens	Human secreted	83	44

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			protein, SEQ ID NO: 7868.		
674	AF119855	Homo sapiens	PRO1847	123	46
675	AJ242540	Volvox carteri f. nagariensis	hydroxyproline-rich glycoprotein DZ-HRGP	242	42
676	Y91666	Homo sapiens	Human secreted protein sequence encoded by gene 72 SEQ ID NO:339.	529	96
677	Y57936	Homo sapiens	Human transmembrane protein HTMPN-60.	669	100
678	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	156	72
679	W18878	Homo sapiens	Human protein kinase C inhibitor, IPKC-1.	98	68
680	Z12168	Canis familiaris	stimulatory GTP binding protein	980	88
681	G00517	Homo sapiens	Human secreted protein, SEQ ID NO: 4598.	160	48
682	W19932	Homo sapiens	Alzheimer's disease protein encoded by DNA from plasmid pGCS55.	362	100
683	Y30709	Homo sapiens	Amino acid sequence of a human secreted protein.	99	56
684	AF269286	Homo sapiens	HC6	137	72
685	M14362	Homo sapiens	T-cell surface antigen CD2 precursor	275	64
686	G02493	Homo sapiens	Human secreted protein, SEQ ID NO: 6574.	173	61
687	AF248635	Mus musculus	lymphocyte antigen 108 isoform 1	303	50
688	D86983	Homo sapiens	similar to D.melanogaster peroxidasin(U11052)	288	55
689	Y59711	Homo sapiens	Secreted protein 58-20-4-G7-FL1.	895	91
690	W48848	Homo sapiens	Human receptor tyrosine kinase LMR3_h N-terminal polypeptide.	1056	89
691	W22652	Homo sapiens	64-863 antibody HSV863 light chain variable region.	459	77
692	AF098066	Homo sapiens	squamous cell carcinoma antigen	1001	98

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			recognized by T cell		
693	D83039	Homo sapiens	eti-1	426	98
694	Y79511	Homo sapiens	Human carbohydrate-associated protein CRBAP-7.	1245	99
695	U12623	Rattus norvegicus	cyclic nucleotide gated cation channel	857	83
696	AF229067	Homo sapiens	PADI-H protein	174	61
697	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	196	75
698	U10921	Macaca mulatta	T-cell receptor alpha chain	578	82
699	U31913	Homo sapiens	HBV-X associated protein	167	100
700	X99043	Mus musculus	brain-derived immunoglobulin superfamily molecule	348	82
701	X59770	Homo sapiens	type II interleukin-1 receptor	2130	100
702	AC018758	Homo sapiens	GPI-anchored metastasis-associated protein homolog	207	31
703	Y28816	Homo sapiens	pm4_13 secreted protein.	280	100
704	Y52386	Homo sapiens	Human transmembrane protein HP02000.	1077	100
705	U12392	Haematobia irritans	putative ATPase	481	55
706	U11265	Homo sapiens	HLA-B35	351	92
707	X64594	Homo sapiens	50 kDa erythrocyte plasma membrane glycoprotein	301	88
708	AB046048	Macaca fascicularis	unnamed portein product	260	67
709	G03807	Homo sapiens	Human secreted protein, SEQ ID NO: 7888.	119	60
710	G03315	Homo sapiens	Human secreted protein, SEQ ID NO: 7396.	314	100
711	Y50945	Homo sapiens	Human adult thymus cDNA clone vh1_1 derived protein #1.	742	100
712	G00564	Homo sapiens	Human secreted protein, SEQ ID NO: 4645.	271	98
713	G00125	Homo sapiens	Human secreted	373	80

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			protein, SEQ ID NO: 4206.		
714	Y13352	Homo sapiens	Amino acid sequence of protein PRO228.	872	98
715	G02753	Homo sapiens	Human secreted protein, SEQ ID NO: 6834.	222	68
716	Y19588	Homo sapiens	Amino acid sequence of a human secreted protein.	329	100
717	AB030235	Canis familiaris	D4 dopamine receptor	79	35
718	W74577	Homo sapiens	Human membrane protein BA2303.	748	100
719	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	235	61
720	X97868	Homo sapiens	arylsulphatase	167	84
721	Y13215	Homo sapiens	Human secreted protein encoded by 5' EST SEQ ID NO: 229.	234	97
722	Y20298	Homo sapiens	Human apolipoprotein E mutant protein fragment 11.	152	39
723	Y86231	Homo sapiens	Human secreted protein HLTHR66, SEQ ID NO:146.	207	51
724	W75083	Homo sapiens	Human secreted protein encoded by gene 27 clone HSPAF93.	685	100
725	W88627	Homo sapiens	Secreted protein encoded by gene 94 clone HPMBQ32.	301	73
726	Y27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	229	58
727	AK025470	Homo sapiens	unnamed protein product	130	64
728	G02872	Homo sapiens	Human secreted protein, SEQ ID NO: 6953.	159	46
729	Y25776	Homo sapiens	Human secreted protein encoded from gene 66.	334	43
730	AF116661	Homo sapiens	PRO1438	153	56
731	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	106	72
732	U77589	Homo sapiens	MHC class II HLA-	133	69

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			DQ-alpha chain		
733	G00357	Homo sapiens	Human secreted protein, SEQ ID NO: 4438.	223	67
734	R28542	Homo sapiens	Human complement type 1 receptor SCR9.	152	96
735	Y27868	Homo sapiens	Human secreted protein encoded by gene No. 107.	150	65
736	AB036706	Homo sapiens	intelectin	368	76
737	Y74042	Homo sapiens	Human prostate tumor EST fragment derived protein #229.	206	65
738	Y36156	Homo sapiens	Human secreted protein #28.	153	77
739	W74802	Homo sapiens	Human secreted protein encoded by gene 73 clone HSQEL25.	1751	79
740	W85614	Homo sapiens	Secreted protein clone fr473_2.	224	91
741	Y13377	Homo sapiens	Amino acid sequence of protein PRO257.	394	98
742	Z69384	Caenorhabditis elegans	Similarity to Salmonella regulatory protein UHPC (SW:UHPC_SALTY)	515	45
743	W47589	Homo sapiens	T-cell receptor beta-chain.	681	92
744	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	243	71
745	Y50690	Homo sapiens	Human Hum4 VL ClaI-HindIII segment encoded protein.	540	81
746	U03414	Rattus norvegicus	neuronal olfactomedin-related ER localized protein	363	67
747	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	84	51
748	Y02671	Homo sapiens	Human secreted protein encoded by gene 22 clone HMSJW18.	145	60
749	AF026919	Homo sapiens	amyloid lambda light chain variable region	557	83
750	X76732	Homo sapiens	NEFA protein	297	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
751	R92754	Homo sapiens	Human growth differentiation factor-12.	628	100
752	Y91462	Homo sapiens	Human secreted protein sequence encoded by gene 12 SEQ ID NO:135.	597	100
753	Y66700	Homo sapiens	Membrane-bound protein PRO1137.	754	99
754	G01648	Homo sapiens	Human secreted protein, SEQ ID NO: 5729.	281	100
755	AB040434	Homo sapiens	hTROY	752	100
756	Y28680	Homo sapiens	Human nm214_3 secreted protein.	178	44
757	W75100	Homo sapiens	Human secreted protein encoded by gene 44 clone HE8CJ26.	203	66
758	AF090930	Homo sapiens	PRO0478	87	45
759	D84336	Rattus norvegicus	ZOG	484	48
760	W88627	Homo sapiens	Secreted protein encoded by gene 94 clone HPMBQ32.	150	81
761	Y48616	Homo sapiens	Human breast tumour-associated protein 77.	569	70
762	Y87320	Homo sapiens	Human signal peptide containing protein HSPP-97 SEQ ID NO:97.	918	100
763	G03655	Homo sapiens	Human secreted protein, SEQ ID NO: 7736.	248	89
764	AF031174	Homo sapiens	Ig-like membrane protein	428	45
765	U08255	Rattus norvegicus	glutamate receptor delta-1 subunit	802	99
766	Y99369	Homo sapiens	Human PRO1249 (UNQ632) amino acid sequence SEQ ID NO:102.	4578	99
767	AK001586	Homo sapiens	unnamed protein product	973	98
768	AC007063	Arabidopsis thaliana	putative ABC transporter	126	31
769	AF303378	Homo sapiens	sialic acid-specific acetylesterase II	713	100
770	G00517	Homo sapiens	Human secreted protein, SEQ ID NO: 4598.	90	37

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
771	Y59733	Homo sapiens	Human normal ovarian tissue derived protein 10.	1253	99
772	AF132856	Homo sapiens	suppressor of G2 allele of skp1 homolog	163	86
773	AB029482	Mus musculus	JNK-binding protein JNKBP1	1082	97
774	G02108	Homo sapiens	Human secreted protein, SEQ ID NO: 6189.	134	62
775	AB047818	Homo sapiens	Soggy	1239	100
776	Y66689	Homo sapiens	Membrane-bound protein PRO1136.	804	99
777	Y71107	Homo sapiens	Human Hydrolase protein-5 (HYDRL-5).	733	99
778	AC005626	Homo sapiens	R29124_1	182	38
779	W88707	Homo sapiens	Secreted protein encoded by gene 174 clone HE9FB42.	126	56
780	G03657	Homo sapiens	Human secreted protein, SEQ ID NO: 7738.	455	96
781	AJ001616	Mus musculus	myeloid associated differentiation protein	201	36
782	Y64942	Homo sapiens	Human 5' EST related polypeptide SEQ ID NO:1103.	86	65
783	AL356276	Homo sapiens	bA367J7.2.1 (novel Immunoglobulin domains containing protein (isoform 1))	845	91
784	Y00876	Homo sapiens	Human LAPH-1 protein sequence.	291	43
785	G00270	Homo sapiens	Human secreted protein, SEQ ID NO: 4351.	603	100
786	AF154121	Homo sapiens	sodium-dependent high-affinity dicarboxylate transporter	864	100
787	Y29804	Homo sapiens	Human GABA B receptor subunit HG20 peptide #6.	83	42
788	AL080239	Homo sapiens	bG256O22.1 (similar to IGFALS (insulin-like growth factor binding protein, acid labile subunit))	599	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
789	AL031856	Schizosaccharomyces pombe	PUTATIVE GOLGI URIDINE DIPHOSPHATE-N-ACETYLGLUCOSAMINE TRANSPORTER	192	40
790	G03448	Homo sapiens	Human secreted protein, SEQ ID NO: 7529.	141	43
791	U81291	Xenopus laevis	oviductin	310	38
792	Y41332	Homo sapiens	Human secreted protein encoded by gene 25 clone HPIBO48.	295	50
793	L20315	Mus musculus	MPS1 protein	702	77
794	G01314	Homo sapiens	Human secreted protein, SEQ ID NO: 5395.	91	36
795	AF003136	Caenorhabditis elegans	similar to 1-acyl-glycerol-3-phosphate acyltransferases	122	38
796	G00637	Homo sapiens	Human secreted protein, SEQ ID NO: 4718.	160	67
797	Y36144	Homo sapiens	Human secreted protein #16.	622	100
798	U09453	Cricetulus griseus	UDP-N-acetylglucosamine: dolichyl phosphate N-acetylglucosamine 1-phosphate transferase	178	66
799	Y76144	Homo sapiens	Human secreted protein encoded by gene 21.	633	100
800	Y73456	Homo sapiens	Human secreted protein clone yd145_1 protein sequence SEQ ID NO:134.	413	89
801	Y86540	Homo sapiens	Human gene 77-encoded protein fragment, SEQ ID NO:457.	443	96
802	U49973	Homo sapiens	ORF1; MER37; putative transposase similar to pogo element	311	53
803	M63573	Homo sapiens	secreted cyclophilin-like protein	700	88
804	AF091622	Homo sapiens	PHD finger protein	177	100

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			3		
805	W37869	Homo sapiens	Human protein comprising secretory signal amino acid sequence 6.	381	100
806	G03556	Homo sapiens	Human secreted protein, SEQ ID NO: 7637.	221	72
807	AF178941	Homo sapiens	ATP-binding cassette sub-family A member 2	583	87
808	Y91385	Homo sapiens	Human secreted protein sequence encoded by gene 40 SEQ ID NO:106.	786	100
809	Y00826	Rattus norvegicus	gp210 (AA 1-1886)	169	83
810	G03143	Homo sapiens	Human secreted protein, SEQ ID NO: 7224.	328	100
811	W00870	Homo sapiens	Polycystic kidney disease 1 (PKD1) polypeptide.	22446	99
812	Y73434	Homo sapiens	Human secreted protein clone yd51_1 protein sequence SEQ ID NO:90.	417	90
813	AB031996	Ralstonia sp. KN1	ferredoxin-like protein	94	44
814	AF201734	Mus musculus	testis specific serine kinase-3	800	87
815	Y01181	Homo sapiens	Polypeptide fragment encoded by gene 12.	68	55
816	Y76166	Homo sapiens	Human secreted protein encoded by gene 43.	724	94
817	AL109827	Homo sapiens	dJ309K20.2 (acrosomal protein ACR55 (similar to rat sperm antigen 4 (SPAG4)))	639	84
818	M62829	Homo sapiens	ETR103	137	53
819	Y38422	Homo sapiens	Human secreted protein.	526	100
820	AF119815	Homo sapiens	G-protein-coupled receptor	561	79
821	Y87101	Homo sapiens	Human secreted protein sequence SEQ ID NO:140.	628	100
822	M91463	Homo sapiens	glucose transporter	213	79

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
823	L34938	Rattus norvegicus	ionotropic glutamate receptor	618	90
824	W17846	Homo sapiens	Cytosolic phospholipase A2/B (clone 19b product).	209	64
825	Y66722	Homo sapiens	Membrane-bound protein PRO1104.	221	67
826	G02493	Homo sapiens	Human secreted protein, SEQ ID NO: 6574.	138	72
827	Y91423	Homo sapiens	Human secreted protein sequence encoded by gene 11 SEQ ID NO:144.	671	54
828	U78090	Rattus norvegicus	potassium channel regulator 1	502	80
829	U08813	Oryctolagus cuniculus	597 aa protein related to Na/glucose cotransporters	906	84
830	AJ272063	Homo sapiens	vanilloid receptor 1	630	90
831	U36898	Rattus norvegicus	pheromone receptor VN6	135	52
832	Z46973	Homo sapiens	phosphatidylinositol 3-kinase	396	80
833	Y95433	Homo sapiens	Human calcium channel SOC-2/CRAC-1 C-terminal polypeptide.	747	99
834	AF132856	Homo sapiens	suppressor of G2 allele of skp1 homolog	163	86
835	AC006042	Homo sapiens	supported by human ESTs AI681256.1(NID:g4891438),N32168.1(NID:g1152567), and genscan	195	87
836	B01247	Homo sapiens	Human HE6 receptor.	371	45
837	G03788	Homo sapiens	Human secreted protein, SEQ ID NO: 7869.	196	59
838	U70136	Homo sapiens	megakaryocyte stimulating factor; MSF	6954	98
839	AF017153	Mus musculus	putative RNA helicase and RNA dependent ATPase	178	51
840	Y31830	Homo sapiens	Human adult brain secreted protein nh899_8.	244	56

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
841	Y27593	Homo sapiens	Human secreted protein encoded by gene No. 27.	437	81
842	G01984	Homo sapiens	Human secreted protein, SEQ ID NO: 6065.	196	74
843	AL008723	Homo sapiens	dJ90G24.4 (SAAT1 (low affinity sodium glucose cotransporter (sodium:solute symporter family)))	183	92
844	AF068065	Cryptosporidium parvum	GP900; mucin-like glycoprotein	263	47
845	Y00815	Homo sapiens	put. LAR preprotein (AA -16 to 1881)	341	100
846	Y06816	Homo sapiens	Human Notch2 (humN2) protein sequence.	1224	99
847	AF104923	Homo sapiens	putative transcription factor	293	95
848	Y09945	Rattus norvegicus	putative integral membrane transport protein	589	53
849	AL157874	Schizosaccharomyces pombe	similar to yeast SCT1 suppressor of a choline transport mutant	146	40
850	R71003	Homo sapiens	Human neuronal calcium channel subunit alpha 1c-1.	141	89
851	X75756	Homo sapiens	protein kinase C mu	318	90
852	AF142676	Drosophila melanogaster	sodium-hydrogen exchanger NHE1	366	48
853	Y45381	Homo sapiens	Human secreted protein fragment encoded from gene 28.	139	73
854	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	121	60
855	U65409	Yarrowia lipolytica	Sla2p	109	25
856	M19419	Mus musculus	proline-rich salivary protein	109	36
857	Y99355	Homo sapiens	Human PRO1295 (UNQ664) amino acid sequence SEQ ID NO:54.	667	98
858	W19919	Homo sapiens	Human Ksr-1 (kinase suppressor of Ras).	211	86
859	Y95436	Homo sapiens	Human calcium	764	84

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			channel SOC-3/CRAC-2.		
860	AF070066	Mus musculus	Citron-K kinase	628	97
861	AF286095	Homo sapiens	IL-22 receptor	933	100
862	AF020195	Mus musculus	pancreas sodium bicarbonate cotransporter	475	68
863	G03712	Homo sapiens	Human secreted protein, SEQ ID NO: 7793.	240	100
864	AF195092	Homo sapiens	sialic acid-binding immunoglobulin-like lectin-8	288	87
865	AF208110	Homo sapiens	IL-17 receptor homolog precursor	2688	99
866	L42338	Mus musculus	sodium channel 25	733	98
867	G02360	Homo sapiens	Human secreted protein, SEQ ID NO: 6441.	101	70
868	AF065215	Homo sapiens	cytosolic phospholipase A2 beta	290	42
869	L43631	Homo sapiens	scaffold attachment factor B	106	95
870	G03034	Homo sapiens	Human secreted protein, SEQ ID NO: 7115.	108	54
871	Z21514	Rattus norvegicus	integral membrane glycoprotein	84	47
872	AF097518	Homo sapiens	liver-specific transporter	147	40
873	AF288223	Drosophila melanogaster	Crossveinless 2	136	39
874	U90126	Bos taurus	ABC transporter	245	36
875	AF099988	Mus musculus	Ste-20 related kinase SPAK	103	34
876	Y70400	Homo sapiens	Human cell-signalling protein-2.	220	86
877	Y36300	Homo sapiens	Human secreted protein encoded by gene 77.	1863	99
878	AF151074	Homo sapiens	HSPC240	193	29
879	Y94951	Homo sapiens	Human secreted protein clone dw78_1 protein sequence SEQ ID NO:108.	251	89
880	AF165310	Homo sapiens	ATP cassette binding transporter 1	231	31
881	AF252281	Mus musculus	Kelch-like 1 protein	256	58

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
882	Y00931	Homo sapiens	Prostate-tumour derived antigen #4.	1039	98
883	Y27576	Homo sapiens	Human secreted protein encoded by gene No. 10.	394	96
884	U00009	Escherichia coli	yeeF	153	30
885	Y57945	Homo sapiens	Human transmembrane protein HTMPN-69.	1543	100
886	Y28678	Homo sapiens	Human cw272_7 secreted protein.	375	60
887	W95349	Homo sapiens	Human foetal brain secreted protein fh170_7.	377	89
888	Y87329	Homo sapiens	Human signal peptide containing protein HSPP-106 SEQ ID NO:106.	285	89
889	AL121845	Homo sapiens	dJ583P15.5.1 (novel protein (isoform 1))	1399	99
890	R75181	Homo sapiens	Partial peptide of human HMW kininogen fragment 1.2.	100	29
891	AF105365	Homo sapiens	K-Cl cotransporter KCC4	680	100
892	Y91644	Homo sapiens	Human secreted protein sequence encoded by gene 43 SEQ ID NO:317.	673	95
893	S52051	Rattus sp.	neurotransmitter transporter	656	99
894	S52051	Rattus sp.	neurotransmitter transporter	617	94
895	R47120	Homo sapiens	Partial human H13 polypeptide.	343	60
896	Z98046	Homo sapiens	dJ1409.2 (Melanoma-Associated Antigen MAGE LIKE)	332	49
897	AJ006203	Oryctolagus cuniculus	capacitative calcium entry channel 2	740	99
898	AF156547	Mus musculus	putative E1-E2 ATPase	769	95
899	AC004076	Homo sapiens	R30217_1	788	98
900	D00099	Homo sapiens	Na,K-ATPase alpha-subunit	753	94
901	R27648	Homo sapiens	Human calcium channel 27980/10.	536	85
902	Y57955	Homo sapiens	Human transmembrane protein HTMPN-79.	606	100
903	AF155913	Mus musculus	putative E1-E2 ATPase	1039	85

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
904	Y73446	Homo sapiens	Human secreted protein clone yc27_1 protein sequence SEQ ID NO:114.	369	66
905	Y94903	Homo sapiens	Human secreted protein clone pt332_1 protein sequence SEQ ID NO:12.	3777	100
906	AB032470	Homo sapiens	seven transmembrane protein TM7SF3	2124	100
907	G00517	Homo sapiens	Human secreted protein, SEQ ID NO: 4598.	90	50
908	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	270	65
909	AF263912	Streptomyces noursei	NysA	113	25
910	Y53051	Homo sapiens	Human secreted protein clone dd119_4 protein sequence SEQ ID NO:108.	843	49
911	Y76179	Homo sapiens	Human secreted protein encoded by gene 56.	634	100
912	G00352	Homo sapiens	Human secreted protein, SEQ ID NO: 4433.	229	71
913	U93569	Homo sapiens	p40	110	32
914	G02639	Homo sapiens	Human secreted protein, SEQ ID NO: 6720.	65	46
915	Y94951	Homo sapiens	Human secreted protein clone dw78_1 protein sequence SEQ ID NO:108.	100	38
916	G03263	Homo sapiens	Human secreted protein, SEQ ID NO: 7344.	80	47
917	W74887	Homo sapiens	Human secreted protein encoded by gene 160 clone HCELB21.	273	69
918	Y73464	Homo sapiens	Human secreted protein clone yl4_1 protein sequence SEQ ID NO:150.	982	90
919	AF064801	Homo sapiens	multiple membrane spanning receptor TRC8	551	32

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
920	Y87335	Homo sapiens	Human signal peptide containing protein HSPP-112 SEQ ID NO:112.	622	99
921	AK000496	Homo sapiens	unnamed protein product	342	74
922	Y41360	Homo sapiens	Human secreted protein encoded by gene 53 clone HJPAD75.	367	100
923	G02872	Homo sapiens	Human secreted protein, SEQ ID NO: 6953.	328	75
924	Y53881	Homo sapiens	A suppressor of cytokine signalling protein designated HSCOP-1.	1489	100
925	AC004144	Homo sapiens	R34001_1	193	60
926	AF119851	Homo sapiens	PRO1722	153	82
927	G02654	Homo sapiens	Human secreted protein, SEQ ID NO: 6735.	82	57
928	Y30819	Homo sapiens	Human secreted protein encoded from gene 9.	264	33
929	G01691	Homo sapiens	Human secreted protein, SEQ ID NO: 5772.	66	43
930	AF187845	Homo sapiens	small protein effector 1 of Cdc42	431	100
931	AL390114	Leishmania major	extremely cysteine/valine rich protein	113	40
932	AL080239	Homo sapiens	bG256022.1 (similar to IGFALS (insulin-like growth factor binding protein, acid labile subunit))	1451	97
933	W85613	Homo sapiens	Secreted protein clone fm60_1.	234	100
934	AF009243	Homo sapiens	proline-rich Gla protein 2	223	42
935	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	271	66
936	AK000385	Homo sapiens	unnamed protein product	193	64
937	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	270	65
938	AF119851	Homo sapiens	PRO1722	170	71
939	Y07922	Homo sapiens	Human secreted protein fragment	226	95

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			encoded from gene 71.		
940	Y41712	Homo sapiens	Human PRO724 protein sequence.	653	96
941	AF010144	Homo sapiens	neuronal thread protein AD7c-NTP	310	64
942	Y45318	Homo sapiens	Human secreted protein fragment encoded from gene 18.	502	98
943	Y07899	Homo sapiens	Human secreted protein fragment encoded from gene 48.	309	98
944	X92485	Plasmodium vivax	pval	185	51
945	AJ289133	Mus musculus	chondroitin 4-O-sulfotransferase	565	43
946	AF151074	Homo sapiens	HSPC240	1337	99
947	U40829	Saccharomyces cerevisiae	Weak similarity near C-terminus to RNA Polymerase beta subunit (Swiss Prot. accession number P11213) and CCAAT-binding transcription factor (PIR accession number A36368)	361	50
948	Y87285	Homo sapiens	Human signal peptide containing protein HSPP-62 SEQ ID NO:62.	348	82
949	Y86230	Homo sapiens	Human secreted protein HKFBC53, SEQ ID NO:145.	368	80
950	AJ010346	Homo sapiens	RING-H2	333	87
951	Z56281	Homo sapiens	interferon regulatory factor 3	1573	81
952	Y57896	Homo sapiens	Human transmembrane protein HTMPN-20.	421	100
953	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	135	55
954	Y87103	Homo sapiens	Human secreted protein sequence SEQ ID NO:142.	83	50
955	Y87345	Homo sapiens	Human signal peptide containing protein HSPP-122 SEQ ID NO:122.	885	99
956	X81479	Homo sapiens	EMR1	1148	99

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
957	AF175406	Homo sapiens	transient receptor potential 4	4061	99
958	G03789	Homo sapiens	Human secreted protein, SEQ ID NO: 7870.	276	73
959	M63274	Plasmodium falciparum	malaria antigen	77	38
960	Y78795	Homo sapiens	Human antizuai-2 (AZ-2) amino acid sequence.	3384	83
961	AL133469	Streptomyces coelicolor A3(2)	putative secreted proline-rich protein	139	41
962	G03787	Homo sapiens	Human secreted protein, SEQ ID NO: 7868.	232	72
963	W74828	Homo sapiens	Human secreted protein encoded by gene 100 clone HLQAB52.	1016	99
964	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	226	58
965	X63893	Sus scrofa	alpha-stimulatory subunit of GTP-binding protein	319	86
966	AB033019	Homo sapiens	KIAA1193 protein	245	97
967	Y36156	Homo sapiens	Human secreted protein #28.	223	85
968	AF119851	Homo sapiens	PRO1722	188	69
969	Y15224	Homo sapiens	Human receptor protein (HURP) 3 amino acid sequence.	214	42
970	G02754	Homo sapiens	Human secreted protein, SEQ ID NO: 6835.	81	62
971	U22376	Homo sapiens	alternatively spliced product using exon 13A	212	81
972	W74870	Homo sapiens	Human secreted protein encoded by gene 142 clone HTWCB92.	164	81
973	Y30817	Homo sapiens	Human secreted protein encoded from gene 7.	717	98
974	AF079529	Homo sapiens	cAMP-specific phosphodiesterase 8B; PDE8B1; 3',5'-cyclic nucleotide phosphodiesterase	2353	96
975	AF099028	Drosophila	putative	1061	52

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
		melanogaster	transmembrane protein cmp44E		
976	G03786	Homo sapiens	Human secreted protein, SEQ ID NO: 7867.	179	72
977	Y22495	Homo sapiens	Human secreted protein sequence clone ch4_11.	1629	100
978	W74813	Homo sapiens	Human secreted protein encoded by gene 85 clone HSDFV29.	722	92
979	AK023408	Homo sapiens	unnamed protein product	974	96
980	AF229178	Homo sapiens	leucine rich repeat and death domain containing protein	276	67
981	G03797	Homo sapiens	Human secreted protein, SEQ ID NO: 7878.	198	56
982	W74831	Homo sapiens	Human secreted protein encoded by gene 103 clone HEBDJ82.	153	100
983	G01335	Homo sapiens	Human secreted protein, SEQ ID NO: 5416.	157	96
984	Y73436	Homo sapiens	Human secreted protein clone ye43_1 protein sequence SEQ ID NO:94.	450	100
985	G00354	Homo sapiens	Human secreted protein, SEQ ID NO: 4435.	96	58
986	Y41712	Homo sapiens	Human PRO724 protein sequence.	639	88
987	Y57896	Homo sapiens	Human transmembrane protein HTMPN-20.	421	100
988	Y66691	Homo sapiens	Membrane-bound protein PRO809.	716	65
989	AF090943	Homo sapiens	PRO0659	926	100
990	G00403	Homo sapiens	Human secreted protein, SEQ ID NO: 4484.	80	46
991	G03411	Homo sapiens	Human secreted protein, SEQ ID NO: 7492.	62	57
992	G00270	Homo sapiens	Human secreted protein, SEQ ID NO: 4351.	143	96
993	AF026246	Homo sapiens	HERV-E integrase	361	80
994	Y36421	Homo sapiens	Fragment of human	83	37

TABLE 2

SEQ ID NO: OF NUCLEOTIDE	ACCESSION NUMBER	SPECIES	DESCRIPTION	SMITH-WATERMAN SCORE	% IDENTITY
			secreted protein encoded by gene 8.		
995	U22376	Homo sapiens	alternatively spliced product using exon 13A	175	78
996	G03790	Homo sapiens	Human secreted protein, SEQ ID NO: 7871.	87	35
997	G00397	Homo sapiens	Human secreted protein, SEQ ID NO: 4478.	149	61
998	J02642	Homo sapiens	glyceraldehyde 3-phosphate dehydrogenase (EC 1.2.1.12)	429	69
999	AF119851	Homo sapiens	PRO1722	204	50
1000	Y91423	Homo sapiens	Human secreted protein sequence encoded by gene 11 SEQ ID NO:144.	393	53
1001	Y66695	Homo sapiens	Membrane-bound protein PRO1344.	1183	87
1002	AF090931	Homo sapiens	PRO0483	149	68
1003	Y33261	Homo sapiens	Human p99 protein.	314	59
1004	U11494	Mus musculus	protein kinase	360	77
1005	AK021848	Homo sapiens	unnamed protein product	186	69
1006	Y13892	Homo sapiens	PI-3 kinase	233	97
1007	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	144	65
1008	G03793	Homo sapiens	Human secreted protein, SEQ ID NO: 7874.	202	67
1009	U91682	Aedes aegypti	vitelline membrane protein homolog	88	42

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
1	1010	100	299	535
2	1011	1002	19	267
3	1012	1003	31	423
4	1013	1007	148	840
5	1014	1009	139	318
6	1015	1010	413	748
7	1016	1012	357	154
8	1017	1014	133	285
9	1018	1016	61	441
10	1019	102	269	832
11	1020	1021	148	342
12	1021	1022	45	452
13	1022	1035	222	779
14	1023	1038	222	779
15	1024	1042	735	517
16	1025	1049	120	320
17	1026	1055	195	395
18	1027	1061	13	189
19	1028	1070	972	1109
20	1029	1071	1504	1686
21	1030	1077	425	574
22	1031	108	46	501
23	1032	1088	1949	7240
24	1033	1092	119	571
25	1034	1095	118	564
26	1035	1096	110	373
27	1036	1098	66	353
28	1037	1099	1	417
29	1038	11	764	573
30	1039	1100	157	1014
31	1040	1102	1526	1813
32	1041	1103	1529	1338
33	1042	1104	685	1929
34	1043	1105	887	744
35	1044	1110	880	443
36	1045	1111	696	538
37	1046	1113	52	1272
38	1047	1117	1357	554
39	1048	1118	1478	1654
40	1049	112	482	712
41	1050	1121	3	1424
42	1051	1130	131	271
43	1052	1132	849	151
44	1053	1137	265	705
45	1054	1138	13	381
46	1055	1140	51	416
47	1056	1146	2389	2541
48	1057	1148	1517	738
49	1058	115	179	334
50	1059	1154	68	358

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
51	1060	1155	34	330
52	1061	1157	242	433
53	1062	1160	410	856
54	1063	1161	154	342
55	1064	1163	202	477
56	1065	1167	72	272
57	1066	117	235	2
58	1067	1170	47	211
59	1068	1176	16	159
60	1069	1177	135	326
61	1070	118	1248	1466
62	1071	1183	431	886
63	1072	1187	191	529
64	1073	1189	1303	1148
65	1074	119	380	613
66	1075	1190	514	1272
67	1076	1192	1529	1338
68	1077	1197	93	533
69	1078	1199	227	391
70	1079	1202	117	407
71	1080	1204	12	413
72	1081	1205	49	603
73	1082	1216	487	1341
74	1083	1217	982	764
75	1084	1228	99	266
76	1085	1230	973	770
77	1086	1233	233	418
78	1087	1234	2959	2078
79	1088	1235	112	1542
80	1089	1239	3019	2822
81	1090	1242	1335	781
82	1091	1248	29	169
83	1092	125	542	405
84	1093	1250	1381	1572
85	1094	1252	480	226
86	1095	1255	19	285
87	1096	1259	165	638
88	1097	126	627	364
89	1098	1260	289	462
90	1099	1262	138	353
91	1100	1264	1159	1299
92	1101	1266	13	402
93	1102	1269	296	805
94	1103	127	212	397
95	1104	1270	126	374
96	1105	1272	2025	2396
97	1106	1273	1367	624
98	1107	1274	1108	746
99	1108	1275	919	1077
100	1109	1279	496	1272

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
101	1110	1283	265	125
102	1111	1287	107	385
103	1112	1297	333	545
104	1113	13	187	47
105	1114	130	126	290
106	1115	1306	323	75
107	1116	1308	457	891
108	1117	1311	258	674
109	1118	1315	242	823
110	1119	1317	82	435
111	1120	1319	781	3306
112	1121	1323	1402	1671
113	1122	1329	279	665
114	1123	1336	37	765
115	1124	1337	177	389
116	1125	1338	887	744
117	1126	1339	248	724
118	1127	1341	298	525
119	1128	1342	26	445
120	1129	1344	23	370
121	1130	1345	160	402
122	1131	1351	2737	2600
123	1132	1353	655	792
124	1133	1354	94	354
125	1134	1356	679	849
126	1135	1358	679	849
127	1136	1359	32	346
128	1137	1361	271	426
129	1138	1362	637	1197
130	1139	1363	24	350
131	1140	1364	119	367
132	1141	1368	111	284
133	1142	1377	1221	1358
134	1143	1378	643	470
135	1144	138	99	539
136	1145	1382	994	686
137	1146	1384	34	264
138	1147	1386	124	477
139	1148	1389	1197	1
140	1149	139	94	294
141	1150	1390	1262	1053
142	1151	1393	1182	1325
143	1152	1394	1351	1542
144	1153	1395	229	411
145	1154	1396	923	1147
146	1155	1397	49	252
147	1156	1398	684	863
148	1157	1399	2613	286
149	1158	14	997	758
150	1159	1403	396	1

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
151	1160	1406	735	1235
152	1161	1407	967	716
153	1162	1408	75	314
154	1163	1409	101	313
155	1164	141	384	551
156	1165	1414	242	532
157	1166	142	158	15
158	1167	1421	604	1425
159	1168	1422	1146	1835
160	1169	1423	2657	3295
161	1170	1424	315	163
162	1171	1426	39	509
163	1172	1427	892	686
164	1173	1428	395	619
165	1174	1430	284	514
166	1175	1432	178	2
167	1176	1433	1136	972
168	1177	1435	1283	1540
169	1178	1436	1669	2235
170	1179	144	55	219
171	1180	1440	363	121
172	1181	1441	1991	2197
173	1182	1443	1765	3054
174	1183	1445	1023	865
175	1184	1446	5692	5859
176	1185	1447	2959	2078
177	1186	1448	775	945
178	1187	1451	858	1430
179	1188	1453	1370	723
180	1189	1455	480	1007
181	1190	1457	278	451
182	1191	1459	824	561
183	1192	1460	56	463
184	1193	1461	184	480
185	1194	1462	486	635
186	1195	1465	319	492
187	1196	1466	398	3
188	1197	1468	262	453
189	1198	1476	526	684
190	1199	148	271	420
191	1200	1482	568	714
192	1201	1484	203	340
193	1202	1486	2185	1190
194	1203	1492	438	2912
195	1204	1493	82	225
196	1205	1501	210	347
197	1206	1508	1364	1101
198	1207	1509	56	613
199	1208	1512	828	965
200	1209	1515	3216	3812

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
201	1210	1516	614	790
202	1211	1522	1709	1029
203	1212	1524	614	799
204	1213	1526	3917	4081
205	1214	1529	221	2146
206	1215	1530	644	390
207	1216	1532	16	1224
208	1217	1535	885	1031
209	1218	1536	245	1156
210	1219	1538	1617	4994
211	1220	154	97	234
212	1221	1540	4325	4158
213	1222	1541	2020	2778
214	1223	1544	595	3168
215	1224	1545	328	534
216	1225	1548	47	211
217	1226	1550	49	201
218	1227	1552	418	558
219	1228	1555	509	330
220	1229	1557	699	854
221	1230	1561	847	1932
222	1231	1563	775	933
223	1232	1565	286	453
224	1233	1567	807	974
225	1234	1568	1227	1601
226	1235	1569	113	328
227	1236	157	145	2
228	1237	1570	222	845
229	1238	1572	167	685
230	1239	1574	97	1167
231	1240	1575	581	2701
232	1241	1577	1246	953
233	1242	1578	1440	175
234	1243	1579	4738	4601
235	1244	1580	1431	1568
236	1245	1581	2491	3222
237	1246	1584	463	2157
238	1247	1585	156	2366
239	1248	1586	167	691
240	1249	1587	102	305
241	1250	1589	1157	1783
242	1251	159	812	639
243	1252	1592	270	521
244	1253	1593	92	310
245	1254	1594	814	188
246	1255	1595	101	2290
247	1256	1597	119	910
248	1257	1598	178	1398
249	1258	1600	2937	2578
250	1259	1604	47	526

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
251	1260	1606	2204	1872
252	1261	1608	235	603
253	1262	1609	156	2366
254	1263	1611	1992	2135
255	1264	1614	968	786
256	1265	1615	2578	2751
257	1266	1616	6256	5813
258	1267	1617	29	709
259	1268	1619	1123	4071
260	1269	1621	581	2704
261	1270	1626	43	321
262	1271	1629	3616	1673
263	1272	163	509	183
264	1273	1630	81	248
265	1274	1631	9	572
266	1275	1633	2565	2807
267	1276	1634	2373	2510
268	1277	1635	3216	4508
269	1278	1636	4239	4081
270	1279	1642	4238	4020
271	1280	1643	152	304
272	1281	1644	47	478
273	1282	1645	121	921
274	1283	1646	3815	3030
275	1284	1647	335	186
276	1285	1649	6	974
277	1286	1654	34	951
278	1287	1655	491	1387
279	1288	1656	78	560
280	1289	1657	1431	1568
281	1290	1658	2373	1015
282	1291	1670	236	3
283	1292	1673	95	1342
284	1293	1685	2124	1786
285	1294	1690	245	415
286	1295	1691	977	774
287	1296	1699	50	247
288	1297	17	282.	112
289	1298	1710	943	239
290	1299	1711	127	318
291	1300	1718	99	338
292	1301	1719	122	382
293	1302	172	33	461
294	1303	1720	180	1
295	1304	1722	160	327
296	1305	1726	175	363
297	1306	1737	84	497
298	1307	1738	188	379
299	1308	174	138	332
300	1309	1743	560	784

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
301	1310	1747	1824	1961
302	1311	1748	97	411
303	1312	1749	151	492
304	1313	177	59	322
305	1314	1776	68	262
306	1315	1779	43	255
307	1316	178	58	399
308	1317	1781	1179	907
309	1318	1786	579	385
310	1319	1789	56	193
311	1320	180	218	78
312	1321	1800	230	394
313	1322	1801	1778	876
314	1323	181	174	428
315	1324	1829	179	42
316	1325	1846	525	785
317	1326	1848	5632	5838
318	1327	185	92	400
319	1328	1850	178	333
320	1329	186	699	1310
321	1330	1860	8	604
322	1331	1868	376	618
323	1332	187	148	366
324	1333	1870	233	388
325	1334	1872	12	206
326	1335	188	181	516
327	1336	1884	549	863
328	1337	1886	128	298
329	1338	189	28	204
330	1339	1891	11246	11097
331	1340	1895	175	417
332	1341	1897	221	400
333	1342	1899	744	890
334	1343	191	77	286
335	1344	1914	403	699
336	1345	192	8	343
337	1346	1947	656	1735
338	1347	1948	32	283
339	1348	195	129	323
340	1349	196	122	295
341	1350	1962	554	733
342	1351	197	110	277
343	1352	1976	348	2450
344	1353	198	93	239
345	1354	1980	137	310
346	1355	2	916	13698
347	1356	20	112	303
348	1357	2005	88	420
349	1358	2007	525	385
350	1359	2008	266	484

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
351	1360	2013	64	234
352	1361	2016	99	329
353	1362	2018	84	401
354	1363	202	300	130
355	1364	2022	1240	1016
356	1365	2029	191	364
357	1366	2037	231	404
358	1367	2043	3206	3349
359	1368	2047	169	456
360	1369	2048	295	522
361	1370	2049	533	769
362	1371	205	4	684
363	1372	2051	403	699
364	1373	2055	173	379
365	1374	2056	270	1157
366	1375	2061	949	725
367	1376	2064	127	309
368	1377	2065	248	577
369	1378	2070	204	344
370	1379	2071	374	793
371	1380	2074	945	796
372	1381	2076	300	67
373	1382	2078	416	586
374	1383	2081	316	507
375	1384	2082	20	220
376	1385	209	19	168
377	1386	210	27	395
378	1387	2102	258	452
379	1388	2104	1706	1539
380	1389	211	84	311
381	1390	212	677	231
382	1391	2120	40	414
383	1392	214	101	268
384	1393	2140	213	377
385	1394	2161	216	368
386	1395	2162	106	420
387	1396	2164	104	250
388	1397	217	333	22
389	1398	218	80	325
390	1399	219	709	506
391	1400	2196	158	319
392	1401	2198	469	1164
393	1402	22	843	700
394	1403	2214	980	822
395	1404	2215	49	318
396	1405	2225	544	1974
397	1406	223	185	21
398	1407	2233	116	313
399	1408	224	189	16
400	1409	2240	2740	2525

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
401	1410	2244	1489	1647
402	1411	2254	72	317
403	1412	226	335	120
404	1413	2260	562	738
405	1414	2268	300	67
406	1415	227	103	615
407	1416	2273	114	344
408	1417	2275	239	985
409	1418	2276	1358	1164
410	1419	2288	56	1459
411	1420	2291	83	532
412	1421	2296	264	530
413	1422	2298	533	781
414	1423	2300	1684	1845
415	1424	2305	8	226
416	1425	231	86	820
417	1426	232	361	1920
418	1427	233	150	467
419	1428	2331	334	2856
420	1429	2334	168	953
421	1430	2341	198	395
422	1431	2344	122	1432
423	1432	2346	1345	1187
424	1433	2348	502	729
425	1434	235	338	844
426	1435	2351	228	713
427	1436	236	232	2
428	1437	2360	1611	1357
429	1438	2362	36	263
430	1439	2364	294	1568
431	1440	2365	103	312
432	1441	2378	209	5281
433	1442	238	53	511
434	1443	2380	207	380
435	1444	239	457	663
436	1445	2392	176	2653
437	1446	2399	940	2040
438	1447	2405	144	380
439	1448	2407	1875	2702
440	1449	2415	1927	137
441	1450	242	1813	986
442	1451	2421	43	405
443	1452	2423	1556	1413
444	1453	2424	673	1041
445	1454	2432	295	1275
446	1455	2438	607	437
447	1456	2444	294	437
448	1457	2447	212	1588
449	1458	2448	52	1440
450	1459	2449	637	1197

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
451	1460	245	208	876
452	1461	2450	3740	4369
453	1462	2453	222	389
454	1463	246	566	763
455	1464	2466	179	778
456	1465	2471	532	669
457	1466	2473	817	650
458	1467	2474	236	1333
459	1468	2476	173	3
460	1469	248	331	2
461	1470	2486	709	885
462	1471	249	88	456
463	1472	2496	107	1054
464	1473	2498	413	607
465	1474	2501	103	267
466	1475	2503	334	717
467	1476	2506	3740	4369
468	1477	2509	188	18
469	1478	2512	78	368
470	1479	2514	16	354
471	1480	2523	53	325
472	1481	2526	223	384
473	1482	2532	596	763
474	1483	2533	62	667
475	1484	2535	89	1519
476	1485	2537	175	375
477	1486	254	299	21
478	1487	2540	553	816
479	1488	2546	1905	1102
480	1489	2555	2046	4541
481	1490	2559	569	733
482	1491	256	9	410
483	1492	2560	288	76
484	1493	2565	3269	3502
485	1494	2569	116	478
486	1495	257	203	475
487	1496	2571	2763	2548
488	1497	2572	65	652
489	1498	2575	70	294
490	1499	2576	1195	1010
491	1500	258	434	21
492	1501	2580	155	400
493	1502	2591	53	214
494	1503	2592	163	348
495	1504	26	261	398
496	1505	2605	277	420
497	1506	261	29	598
498	1507	2614	1331	1510
499	1508	2617	235	378
500	1509	262	204	458

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
501	1510	2624	254	418
502	1511	263	247	570
503	1512	264	184	540
504	1513	2643	1108	4026
505	1514	2644	305	535
506	1515	2645	1952	1509
507	1516	2647	1225	404
508	1517	2648	41	778
509	1518	265	53	418
510	1519	2650	190	936
511	1520	2658	1576	2451
512	1521	2659	44	430
513	1522	266	350	153
514	1523	2663	785	1177
515	1524	2665	395	550
516	1525	2666	41	778
517	1526	2667	244	384
518	1527	2668	174	527
519	1528	2669	27	302
520	1529	2678	1172	960
521	1530	2684	178	432
522	1531	269	341	520
523	1532	2699	1241	1083
524	1533	2701	402	2624
525	1534	2702	28	177
526	1535	2706	1108	4026
527	1536	2707	1240	1016
528	1537	271	59	346
529	1538	2714	34	987
530	1539	2715	1117	647
531	1540	2717	25	429
532	1541	2718	1670	1885
533	1542	2719	31	1137
534	1543	272	6	152
535	1544	2726	230	592
536	1545	2728	578	369
537	1546	2731	193	366
538	1547	2735	495	301
539	1548	274	352	119
540	1549	2741	94	255
541	1550	2798	1031	1240
542	1551	28	54	725
543	1552	2803	204	374
544	1553	2809	216	938
545	1554	2822	280	447
546	1555	2823	197	388
547	1556	2824	224	12
548	1557	2826	79	456
549	1558	2828	24	428
550	1559	2838	90	698

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
551	1560	284	21	197
552	1561	2847	113	262
553	1562	285	146	292
554	1563	2852	233	439
555	1564	2854	830	988
556	1565	2855	336	1043
557	1566	2856	384	614
558	1567	2857	437	748
559	1568	2859	1295	1158
560	1569	286	30	179
561	1570	2860	2618	2469
562	1571	2864	1325	1176
563	1572	2867	1034	795
564	1573	288	190	345
565	1574	2884	856	257
566	1575	2886	15	167
567	1576	2891	34	405
568	1577	2900	104	2683
569	1578	2901	193	366
570	1579	2902	91	1806
571	1580	2907	268	498
572	1581	2908	83	1564
573	1582	2910	2131	3117
574	1583	2915	715	861
575	1584	2916	52	2064
576	1585	2919	62	1015
577	1586	292	615	854
578	1587	2923	332	1279
579	1588	2924	264	422
580	1589	2925	122	1432
581	1590	2930	195	341
582	1591	2931	221	3
583	1592	2934	1642	1827
584	1593	2937	38	421
585	1594	2940	520	383
586	1595	2944	325	68
587	1596	295	49	255
588	1597	2950	226	59
589	1598	2951	110	400
590	1599	2955	303	641
591	1600	2957	365	673
592	1601	2964	96	347
593	1602	2967	738	466
594	1603	2968	222	428
595	1604	2969	365	117
596	1605	2970	314	643
597	1606	2973	961	1176
598	1607	2975	975	799
599	1608	2979	89	442
600	1609	298	152	3

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
601	1610	2991	112	261
602	1611	2995	201	368
603	1612	3	13559	13335
604	1613	30	176	751
605	1614	3002	1807	2265
606	1615	3005	339	743
607	1616	3023	64	243
608	1617	3039	71	217
609	1618	304	50	334
610	1619	305	226	387
611	1620	3051	56	268
612	1621	307	9.	278
613	1622	308	116	274
614	1623	3085	97	3030
615	1624	3088	801	634
616	1625	3089	18	455
617	1626	3094	92	1246
618	1627	3098	40	342
619	1628	310	142	354
620	1629	3101	48	383
621	1630	3105	188	328
622	1631	3107	177	413
623	1632	3109	184	327
624	1633	3114	70	243
625	1634	3115	295	459
626	1635	3116	115	348
627	1636	3119	70	222
628	1637	3120	163	531
629	1638	3122	60	266
630	1639	3129	226	501
631	1640	3146	190	363
632	1641	3151	212	1588
633	1642	3153	86	517
634	1643	3165	244	453
635	1644	317	97	342
636	1645	3179	106	873
637	1646	3181	108	896
638	1647	3182	554	775
639	1648	3192	268	441
640	1649	3194	923	1192
641	1650	3195	38	376
642	1651	32	185	334
643	1652	3200	199	561
644	1653	3201	516	848
645	1654	3202	232	681
646	1655	3208	836	633
647	1656	3210	202	384
648	1657	3214	349	588
649	1658	3215	859	380
650	1659	3216	51	320

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
651	1660	3220	116	283
652	1661	3222	324	545
653	1662	3227	385	1197
654	1663	323	65	223
655	1664	3240	385	1197
656	1665	3243	65	916
657	1666	3250	263	463
658	1667	3252	244	480
659	1668	3253	136	297
660	1669	3254	83	439
661	1670	3255	573	920
662	1671	3257	548	757
663	1672	3259	34	822
664	1673	326	58	525
665	1674	3263	102	350
666	1675	3270	313	152
667	1676	3271	117	473
668	1677	3272	44	190
669	1678	3273	106	486
670	1679	3274	246	392
671	1680	3278	174	1
672	1681	3281	988	1134
673	1682	3282	101	334
674	1683	3291	129	284
675	1684	3294	101	595
676	1685	3296	107	565
677	1686	3298	130	552
678	1687	3299	333	515
679	1688	3300	324	121
680	1689	3303	378	157
681	1690	3306	296	637
682	1691	3307	1454	1660
683	1692	3309	163	471
684	1693	3311	335	478
685	1694	3312	5	280
686	1695	3313	298	546
687	1696	3314	50	526
688	1697	3315	99	413
689	1698	3322	101	685
690	1699	3323	66	356
691	1700	3324	76	462
692	1701	3328	248	904
693	1702	3335	136	393
694	1703	3336	47	733
695	1704	3338	181	786
696	1705	3339	58	231
697	1706	3342	226	390
698	1707	3349	72	488
699	1708	3356	208	384
700	1709	3358	194	436

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
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703	1712	3367	364	735
704	1713	3370	237	878
705	1714	3371	188	721
706	1715	3372	14	241
707	1716	3373	42	290
708	1717	3387	32	202
709	1718	3389	29	256
710	1719	3390	181	393
711	1720	3396	520	822
712	1721	3410	10	153
713	1722	3412	82	291
714	1723	3414	453	292
715	1724	3421	158	337
716	1725	3427	430	618
717	1726	3430	210	380
718	1727	3431	295	432
719	1728	3440	419	556
720	1729	3444	402	256
721	1730	3445	281	430
722	1731	346	42	722
723	1732	347	384	689
724	1733	3470	114	530
725	1734	3478	38	217
726	1735	3479	161	379
727	1736	348	37	231
728	1737	3482	156	296
729	1738	35	255	575
730	1739	3503	185	454
731	1740	3505	252	422
732	1741	3529	37	183
733	1742	353	262	522
734	1743	3537	127	273
735	1744	3539	98	268
736	1745	3542	25	312
737	1746	3543	70	228
738	1747	3544	31	177
739	1748	3548	972	385
740	1749	3553	27	164
741	1750	3560	113	358
742	1751	3563	483	764
743	1752	3564	6	434
744	1753	3566	316	507
745	1754	3570	6	377
746	1755	3574	108	440
747	1756	3576	569	348
748	1757	3579	293	442
749	1758	3582	20	388
750	1759	3583	172	396

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
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753	1762	3599	40	474
754	1763	3606	335	1105
755	1764	3609	169	666
756	1765	3617	141	410
757	1766	3620	218	388
758	1767	3630	189	1
759	1768	3642	122	643
760	1769	3644	431	664
761	1770	3647	274	720
762	1771	3651	245	472
763	1772	3652	259	642
764	1773	3653	153	1994
765	1774	3654	87	554
766	1775	3657	57	2744
767	1776	3658	387	920
768	1777	366	402	578
769	1778	3660	120	530
770	1779	3661	480	674
771	1780	3663	1096	938
772	1781	3669	689	1015
773	1782	3677	469	642
774	1783	3678	1194	889
775	1784	3685	406	1134
776	1785	3689	233	706
777	1786	3693	21	446
778	1787	3699	55	414
779	1788	370	59	262
780	1789	3707	38	436
781	1790	3711	229	474
782	1791	3713	314	463
783	1792	3717	178	675
784	1793	3720	258	695
785	1794	3721	96	548
786	1795	3722	32	562
787	1796	3724	220	513
788	1797	3726	180	467
789	1798	3729	251	523
790	1799	373	110	340
791	1800	3735	91	636
792	1801	3736	275	880
793	1802	3738	106	621
794	1803	3762	702	1175
795	1804	3768	293	598
796	1805	377	96	257
797	1806	3772	169	2
798	1807	3786	108	248
799	1808	3787	282	638
800	1809	3789	139	411

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
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803	1812	382	24	275
804	1813	385	138	1
805	1814	388	268	74
806	1815	39	302	3
807	1816	391	24	368
808	1817	395	51	482
809	1818	397	422	766
810	1819	399	102	311
811	1820	4	11219	13123
812	1821	405	253	2
813	1822	406	342	665
814	1823	411	321	542
815	1824	416	736	909
816	1825	422	1541	867
817	1826	43	330	686
818	1827	434	207	34
819	1828	435	140	445
820	1829	437	160	423
821	1830	439	347	706
822	1831	44	91	282
823	1832	450	136	402
824	1833	458	169	348
825	1834	459	99	284
826	1835	462	70	282
827	1836	465	462	791
828	1837	467	76	348
829	1838	470	35	637
830	1839	475	37	426
831	1840	477	242	382
832	1841	478	66	311
833	1842	485	196	426
834	1843	488	117	443
835	1844	490	231	485
836	1845	493	281	610
837	1846	496	90	371
838	1847	5	34	3933
839	1848	501	60	368
840	1849	502	707	856
841	1850	504	208	459
842	1851	505	165	317
843	1852	509	62	223
844	1853	511	46	432
845	1854	515	13	582
846	1855	516	92	325
847	1856	518	83	283
848	1857	519	365	685
849	1858	521	12	413
850	1859	525	6	251

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
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852	1861	532	207	590
853	1862	536	226	53
854	1863	537	49	198
855	1864	540	270	1
856	1865	541	38	412
857	1866	546	388	2
858	1867	555	199	438
859	1868	556	144	482
860	1869	559	380	165
861	1870	563	27	617
862	1871	566	158	382
863	1872	568	69	320
864	1873	57	6	158
865	1874	571	8	1516
866	1875	572	32	505
867	1876	573	139	456
868	1877	574	49	771
869	1878	576	519	370
870	1879	578	168	1
871	1880	580	159	641
872	1881	581	108	497
873	1882	582	80	403
874	1883	587	172	435
875	1884	589	27	374
876	1885	590	84	428
877	1886	595	68	1138
878	1887	598	1023	766
879	1888	61	65	208
880	1889	612	310	546
881	1890	614	166	918
882	1891	617	252	602
883	1892	62	969	661
884	1893	620	188	418
885	1894	622	877	1014
886	1895	629	202	687
887	1896	63	98	277
888	1897	632	221	367
889	1898	64	536	381
890	1899	640	338	3
891	1900	641	12	395
892	1901	642	194	397
893	1902	644	15	395
894	1903	646	132	380
895	1904	647	3	389
896	1905	650	135	413
897	1906	651	231	428
898	1907	653	128	442
899	1908	654	214	77
900	1909	656	49	465

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
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902	1911	66	267	614
903	1912	662	387	701
904	1913	666	76	498
905	1914	667	517	2184
906	1915	668	1423	788
907	1916	67	107	622
908	1917	678	172	387
909	1918	68	78	341
910	1919	680	832	671
911	1920	683	505	164
912	1921	687	105	521
913	1922	690	139	294
914	1923	691	244	456
915	1924	699	194	754
916	1925	701	371	520
917	1926	702	1888	2028
918	1927	704	1254	808
919	1928	705	126	1463
920	1929	706	31	390
921	1930	707	367	2
922	1931	709	1152	934
923	1932	715	744	541
924	1933	716	1360	1220
925	1934	722	173	430
926	1935	725	498	271
927	1936	727	18	164
928	1937	729	230	3
929	1938	73	262	834
930	1939	731	491	246
931	1940	740	20	322
932	1941	741	1430	1167
933	1942	747	660	523
934	1943	749	263	727
935	1944	750	209	391
936	1945	751	753	517
937	1946	755	172	387
938	1947	756	209	376
939	1948	76	656	513
940	1949	760	131	538
941	1950	763	893	1126
942	1951	766	1271	1537
943	1952	771	458	318
944	1953	775	391	558
945	1954	781	410	1684
946	1955	791	967	1284
947	1956	793	554	970
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949	1958	796	342	199
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TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
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954	1963	802	331	489
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957	1966	819	723	2669
958	1967	820	964	725
959	1968	825	182	328
960	1969	829	1843	2292
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962	1971	832	150	341
963	1972	835	130	762
964	1973	836	449	291
965	1974	838	175	324
966	1975	84	175	435
967	1976	842	73	393
968	1977	844	423	824
969	1978	845	214	32
970	1979	846	120	317
971	1980	847	212	364
972	1981	85	190	426
973	1982	852	74	541
974	1983	855	1653	1465
975	1984	857	1964	2659
976	1985	858	598	1020
977	1986	861	58	933
978	1987	876	222	779
979	1988	878	2021	2161
980	1989	879	189	362
981	1990	88	39	278
982	1991	886	1165	1022
983	1992	891	158	310
984	1993	892	759	995
985	1994	895	224	379
986	1995	897	131	622
987	1996	9	1678	1448
988	1997	901	55	753
989	1998	906	450	623
990	1999	913	40	237
991	2000	918	17	334
992	2001	92	385	122
993	2002	926	772	518
994	2003	929	146	283
995	2004	932	23	175
996	2005	934	38	235
997	2006	935	286	423
998	2007	936	24	284
999	2008	939	450	623
1000	2009	94	139	2

TABLE 3

SEQ ID NO: OF NUCLEOTIDE	SEQ ID NO: OF AMINO ACID	SEQ ID NO: IN USSN 09/491,404	START NUCLEOTIDE OF CODING REGION	STOP NUCLEOTIDE OF CODING REGION
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1003	2012	957	80	400
1004	2013	96	187	387
1005	2014	964	1352	1528
1006	2015	97	166	2
1007	2016	98	535	344
1008	2017	995	559	386
1009	2018	997	34	231

WHAT IS CLAIMED IS:

1. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of SEQ ID NO: 1-1009, a mature protein coding portion of SEQ ID NO: 1-1009, an active domain of SEQ ID NO: 1-1009, and complementary sequences thereof.

2. An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide hybridizes to the polynucleotide of claim 1 under stringent hybridization conditions.

3. An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide has greater than about 90% sequence identity with the polynucleotide of claim 1.

4. The polynucleotide of claim 1 wherein said polynucleotide is DNA.

5. An isolated polynucleotide of claim 1 wherein said polynucleotide comprises the complementary sequences.

6. A vector comprising the polynucleotide of claim 1.

7. An expression vector comprising the polynucleotide of claim 1.

8. A host cell genetically engineered to comprise the polynucleotide of claim 1.

9. A host cell genetically engineered to comprise the polynucleotide of claim 1 operatively associated with a regulatory sequence that modulates expression of the polynucleotide in the host cell.

10. An isolated polypeptide, wherein the polypeptide is selected from the group consisting of:

(a) a polypeptide encoded by any one of the polynucleotides of claim 1; and

(b) a polypeptide encoded by a polynucleotide hybridizing under stringent conditions with any one of SEQ ID NO:1-1009.

11. A composition comprising the polypeptide of claim 10 and a carrier.

12. An antibody directed against the polypeptide of claim 10.

13. A method for detecting the polynucleotide of claim 1 in a sample, comprising:

a) contacting the sample with a compound that binds to and forms a complex with the polynucleotide of claim 1 for a period sufficient to form the complex; and

b) detecting the complex, so that if a complex is detected, the polynucleotide of claim 1 is detected.

14. A method for detecting the polynucleotide of claim 1 in a sample, comprising:

a) contacting the sample under stringent hybridization conditions with nucleic acid primers that anneal to the polynucleotide of claim 1 under such conditions;

b) amplifying a product comprising at least a portion of the polynucleotide of claim 1; and

c) detecting said product and thereby the polynucleotide of claim 1 in the sample.

15. The method of claim 14, wherein the polynucleotide is an RNA molecule and the method further comprises reverse transcribing an annealed RNA molecule into a cDNA polynucleotide.

16. A method for detecting the polypeptide of claim 10 in a sample, comprising:

a) contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex; and

b) detecting formation of the complex, so that if a complex formation is detected, the polypeptide of claim 10 is detected.

17. A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a) contacting the compound with the polypeptide of claim 10 under conditions sufficient to form a polypeptide/compound complex; and

b) detecting the complex, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

18. A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a) contacting the compound with the polypeptide of claim 10, in a cell, under conditions sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a reporter gene sequence in the cell; and

b) detecting the complex by detecting reporter gene sequence expression, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

19. A method of producing the polypeptide of claim 10, comprising,

a) culturing a host cell comprising a polynucleotide sequence selected from the group consisting of a polynucleotide sequence of SEQ ID NO: 1-1009, a mature protein coding portion of SEQ ID NO: 1-1009, an active domain of SEQ ID NO: 1-1009, complementary sequences thereof and a polynucleotide sequence hybridizing under stringent conditions to SEQ ID NO: 1-1009, under conditions sufficient to express the polypeptide in said cell; and

b) isolating the polypeptide from the cell culture or cells of step (a).

20. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 1010-2018, the mature protein portion thereof, or the active domain thereof.

21. The polypeptide of claim 20 wherein the polypeptide is provided on a polypeptide array.

22. A collection of polynucleotides, wherein the collection comprises the sequence information of at least one of SEQ ID NO: 1-1009.

23. The collection of claim 22, wherein the collection is provided on a nucleic acid array.

24. The collection of claim 23, wherein the array detects full-matches to any one of the polynucleotides in the collection.

25. The collection of claim 23, wherein the array detects mismatches to any one of the polynucleotides in the collection.

26. The collection of claim 22, wherein the collection is provided in a computer-readable format.

27. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.

28. A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising an antibody that specifically binds to a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.

SEQUENCE LISTING

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Tang et al.

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<210> 6
<211> 947
<212> DNA
<213> Homo sapiens

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<210> 7
<211> 625
<212> DNA
<213> Homo sapiens

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<210> 8
<211> 1045
<212> DNA
<213> Homo sapiens

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tcccataatc acatgagact attattttca tgtagggggc gggggatgtt tctcttccgc 180
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acagaaaatg gtcttaaaaa aaaaa 1045

<210> 9
<211> 442
<212> DNA
<213> Homo sapiens

<400> 9
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<210> 10
<211> 904
<212> DNA
<213> Homo sapiens

<400> 10
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aaggaggagc tttcgggcag gacggggcca gggcaggctg gggcgagggc tcctgctggt   180
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<210> 11
<211> 880
<212> DNA
<213> Homo sapiens

<400> 11
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<210> 12
<211> 795
<212> DNA
<213> Homo sapiens

<400> 12
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<210> 13
<211> 1694
<212> DNA
<213> Homo sapiens

<400> 13
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aaaaaaaaaa aagg 1694

<210> 14
<211> 1694
<212> DNA
<213> Homo sapiens

<400> 14
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aaaaaaaaaa aagg 1694

<210> 15
<211> 739
<212> DNA
<213> Homo sapiens

<400> 15
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aaccagacat accattccg 739

<210> 16

<211> 725
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 16
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aaaaa 725

<210> 17
<211> 871
<212> DNA
<213> Homo sapiens

<400> 17
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gaccaccctg cacgagggca cagccctcgc tgcccagcgc catctaggac cctcctggcc 180
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<210> 18
<211> 703
<212> DNA
<213> Homo sapiens

<400> 18

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<210> 19
<211> 1488
<212> DNA
<213> Homo sapiens

<400> 19

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<212> DNA
<213> Homo sapiens

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<211> 1528
<212> DNA
<213> Homo sapiens

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<211> 1947
<212> DNA
<213> Homo sapiens

<400> 35
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<211> 1392
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<211> 717
<212> DNA
<213> Homo sapiens

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<210> 41
<211> 1424
<212> DNA
<213> Homo sapiens

<400> 41
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<210> 42
<211> 766
<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

<400> 42

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<210> 43
<211> 849
<212> DNA
<213> Homo sapiens

<400> 43

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<210> 44
<211> 1476
<212> DNA
<213> Homo sapiens

<400> 44
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<210> 45
<211> 1712
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1712)
<223> n = a,t,c or g

<400> 45
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<210> 46
<211> 755
<212> DNA
<213> Homo sapiens

<400> 46

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<210> 47
<211> 2820
<212> DNA
<213> Homo sapiens

<400> 47

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<211> 1517
<212> DNA
<213> Homo sapiens

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<210> 49
<211> 1614
<212> DNA
<213> Homo sapiens

<400> 49
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ggggctgggt ctgctgagac aggtgactag ggtgcactgg aagaggttag cgccactaga   1560
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<210> 50
<211> 659
<212> DNA
<213> Homo sapiens

<400> 50
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<210> 51
<211> 450
<212> DNA
<213> Homo sapiens

<400> 51
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aactacaatt actgtaactt taaactctaa gatatttgcc ctcctgaggt ctcgctttgg 360
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<210> 52
<211> 1044
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1044)
<223> n = a,t,c or g

<400> 52
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<210> 53
<211> 1328
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1328)
<223> n = a,t,c or g

<400> 53
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ttaatagtta gaagtaagaa ctactgctta taatatctgg gcagtgatca accatttcag 180
caactggctt gctactaccc tcagcatatt ttatttgctc aagattgcca atttctccaa 240
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acagaagc 1328

<210> 54
<211> 804
<212> DNA
<213> Homo sapiens

<400> 54
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gccgagggcc agcgcagtgc cacgtcacag gccatgcacc agctcttcgg gctgtttgtc 180
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ccagcccctg agaggacacg ctccttttcg aagatgctga ctggctgcct actaggaagt 540
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<210> 55
<211> 532
<212> DNA
<213> Homo sapiens

<400> 55
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caggcagtct tgctgtcccc aggaggccct ggctccactc tggacaccac ttgttgatta 480
ttttcttgtt tgagcccctc ccccaataaa gaatttttat cgggttttaa aa 532

<210> 56
<211> 957
<212> DNA
<213> Homo sapiens

<400> 56
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ccaggtaccc ctcatgttta tgtgcacagc aaaaggaggg cctttgctca tacttcg 957

<210> 57
<211> 410
<212> DNA
<213> Homo sapiens

<400> 57
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cgcaggctcc ttcccagtgc cctcagtccg ggaagctcag acagggagct ccaggaaatc 360
ctctaaaagg ggcccctggg aatactggcc acaaggtgga ggctctgccc 410

<210> 58
<211> 871
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(871)
<223> n = a,t,c or g

<400> 58
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caaagacata aggcatttct atttgaggca ttggagaaat gagaggaatt gcatttgcca 180
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cctcttaagg acccagttta aagcccggcg c 871

<210> 59
<211> 636
<212> DNA
<213> Homo sapiens

<400> 59
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agctcagaag cccaggttga gagacccaaa ttgtca 636

<210> 60
<211> 996
<212> DNA
<213> Homo sapiens

<400> 60
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tagagaaaat agacattagt ggaaaaacta ctgaaa 996

<210> 61
<211> 1622
<212> DNA
<213> Homo sapiens

<400> 61
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<210> 62
<211> 887
<212> DNA
<213> Homo sapiens

<400> 62
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<210> 63
<211> 857
<212> DNA
<213> Homo sapiens

<400> 63
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<210> 64
<211> 2093
<212> DNA
<213> Homo sapiens

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<210> 65
<211> 683

<212> DNA
<213> Homo sapiens

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<211> 2549
<212> DNA
<213> Homo sapiens

<400> 67

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<210> 68
<211> 533
<212> DNA
<213> Homo sapiens

<400> 68

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<210> 69
<211> 850
<212> DNA
<213> Homo sapiens

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<210> 70
<211> 859
<212> DNA
<213> Homo sapiens

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<222> (1)...(859)
<223> n = a,t,c or g

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<211> 864
<212> DNA
<213> Homo sapiens

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<210> 72
<211> 746
<212> DNA
<213> Homo sapiens

<400> 72
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<210> 73
<211> 1928
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1928)
<223> n = a,t,c or g

<400> 73
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<210> 74
<211> 3644
<212> DNA
<213> Homo sapiens

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<210> 81
<211> 1365
<212> DNA
<213> Homo sapiens

<400> 81

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cagaaaatat ataatcaact gttggtgtga taacaggata aaattccacc ctgtatatga    180
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<210> 82
<211> 603
<212> DNA
<213> Homo sapiens

<400> 82

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<210> 83
<211> 723
<212> DNA
<213> Homo sapiens

<400> 83
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<210> 84
<211> 1929
<212> DNA
<213> Homo sapiens

<400> 84
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<211> 891
<212> DNA
<213> Homo sapiens

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<211> 654
<212> DNA
<213> Homo sapiens

<400> 86
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<210> 87
<211> 1404
<212> DNA
<213> Homo sapiens

<400> 87
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<211> 662
<212> DNA
<213> Homo sapiens

<400> 88
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<212> DNA
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<210> 90
<211> 871
<212> DNA
<213> Homo sapiens

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<400> 97

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<210> 98
<211> 1493
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1493)
<223> n = a,t,c or g

<400> 98
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gtcattgctc ggcaatccac ataactacag agtagagcgc aagctattgt tcgtgatcag 240
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<210> 99
<211> 1949
<212> DNA
<213> Homo sapiens

<400> 99
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tgcctggtgt gaagaaggtt tatctacagg tactctcctt tttcttcatt ggtctgatgt 180
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gccatgaccc atactcattt acaaaaacaa gaacactttc ctctatccct aaaattatgc 1860
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ctttgtcata catgcagttg caccttacc 1949

<210> 100
<211> 1496
<212> DNA
<213> Homo sapiens

<400> 100
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ttattaaaca tcgaaggatc cacactggag agaaacccta taaatgtaat gagtgtggga 180
aagcttttaa tcagagctca gtccttattt tacatcagag gattcatact ggagagaaac 240
cctatccctg tgatcaatgt agcaaaacct tcagtaggct ttcagatctt attaatcatc 300
aacgaattca cactggagag aagccttacc catgtaatca gtgcaataaa atgtttagtc 360
gaagatgaga tcttgttaaa catcacagaa ttcatacagg tgagaaaccc tatgaatgtg 420
atgaatgtgg gaaaaccttt agtcagagct ccaaccttat tcttcatcag agaatccaca 480
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ggcagatgtg gaagcatcat ttgagcccag gagtttgagg ctgcagtgag ctatgattcc 1440
~~accattgcac tccagtctgg~~ gcaacagagc aagaccctgt ctatttaaaa aaaaaa 1496

<210> 101
<211> 529
<212> DNA
<213> Homo sapiens

<400> 101
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tcattcagca gtcagatctt cctcaaaact ggaagttttg atggatagtc acaaggaggt 120

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tgtcctagca aacattcaaa aaatagaagg ccccacttaa actgtgaggg gaaattgctg     180
gccaacgttc aggatctcta gagcaaaaag cctgcacaaa agaactgcag actgcatcta     240
gcagtgataa aagagaacat gtcataccca agctgatctt atcccaggaa tccaaggttg     300
gttaaatagc aacactcaga gatcaggagt aaaacatcac gtgcagctca gtactgaact     360
gaagaaggaa ccagcaccct acttctcccc gataggacag cattttcacc aaggcaggac     420
ggcctgcatc acgaggctgt ggcctccctc cccagacccc ttacctctgc cccgggcctc     480
cttgagtttt gcagggatcc actccatagc tctggcagag attttggtt                529
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<210> 102
<211> 697
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(697)
<223> n = a,t,c or g

<400> 102

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cccctcagtg aggatctttg tgtacttgct attccgtttg cacacccagc gtggcctcct     180
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agtcttgtcc tgttccactc aaatctacac tgagggcagt tggcctggat gggcttcact     300
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ttctcctctc tgcccctcat gctgaccttc tagatgccac tcccaaatcc ccttcactcc     420
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cctgatgtgg acttggatgc cctgggggga tagntctgct gacactgtgg cctgaaatan     600
aaaaagtgct gagcaagcag tgtatgctgg agcctcagta gaccatctgc acaatgggga     660
cgtggagagg atggttggat tatgcctctg catgtca                             697
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<210> 103
<211> 711
<212> DNA
<213> Homo sapiens

<400> 103

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attctacctt tttggagttt atcttgaacc aagaaaaatt atgggaggaa ataacagctc     180
attgcttgat taatgattca aatttttaaa atgtttctca tgaaatgaaa gaatggcaga     240
tgttaatatt gttattatct taatggccat gactcaattg accctagaat gagatttcat     300
ttgtcacata gcatctgcaa ggctgaattt tcatgatgcc aaccaatctg gcacatcttg     360
ttttctggca agctcttctg gcctctggca ggtttagcct aatggagcac tatccaccca     420
acgtccagtc caacagagga atcacacatt acatgcttcc cagagggtac atcctggggc     480
tgctttacag ctctgctggc aacacaggaa cttcccgtcc acgaagaacc cactatggta     540
cttgaccagc aggtgggggt taccccttat ctctgaggag ccgacaggaa gaaaacaaga     600
cgttagcaaa cgttgatcca agaggagaaa cattcagtaa gtgctgttat cacagaacca     660
taaaaacccc tttggcagaa cccagggaag aagcaaaggg ttccgaaaga a              711
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<210> 104
<211> 429
<212> DNA
<213> Homo sapiens

<400> 104
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ctccttgttc cctaagacac aacaatattg aatgtaggcc aattagtaac cctttgacaa 180
ggtacatagt cacctaagag ctctgttgaa gatgtacaag aaaatgttct tttcatacct 240
gctaacaaca tccatcctgc agtctgtgga tccaggagtc aatttgacat agaagtctga 300
tttaagaaac acctttcgaa aggctatggc tgctatacag aggatgattc ctctgatgga 360
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aacctttgg 429

<210> 105
<211> 1028
<212> DNA
<213> Homo sapiens

<400> 105
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ttctaatagg tttttaatgg tccctttggt attttttaca tatagtatta tgctttctgc 120
aaataatgac agttcttttct ttccaatatg aatacttaat ttttctcctt acttcactca 180
ctacaatcta taatacgaca ttgagtagaa gtggtgatgg aagacgtact tgccttgttt 240
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cagccgcg 1028

<210> 106
<211> 738
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(738)
<223> n = a,t,c or g

<400> 106
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gtggctgcag aagccatgaa gccaggttct gtatgtggca gcccagaggg gccgcccctg 180
ggctctgtcc agccctgtga ttcctggaag gccctcctcc gggaagagac cggtaatgaa 240
aaacacagca aaacaaaact ggcagtgccg ccgactgagc acttagagct caccaggcac 300
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<210> 107
<211> 1706
<212> DNA
<213> Homo sapiens

<400> 107
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caattcgaca cctccttcat gtacatgatc gctggcctgt gcatgctgaa gctctatcag 180
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<210> 108
<211> 851
<212> DNA
<213> Homo sapiens

<400> 108
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aggtcccctg tggaaaaagg gtcagaggcc aaaggatggg agggggtcag gctggaactg 180
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atctggagct c 851

<210> 109
<211> 959
<212> DNA
<213> Homo sapiens

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<211> 399
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<211> 1245
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<210> 132
<211> 466
<212> DNA
<213> Homo sapiens

<400> 132
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aaattggaga ccctccaaat gggctattga ttgaaccttt agggaa 466

<210> 133
<211> 1845
<212> DNA
<213> Homo sapiens

<400> 133
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<211> 1019
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1019)
<223> n = a,t,c or g


<400> 134
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<210> 135
<211> 764
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(764)
<223> n = a,t,c or g

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<211> 1016
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(1016)
<223> n = a,t,c or g

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<212> DNA
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tatagggagg tttatagaag acattgaata atataggttt aggcttactt ctcttagggg 660
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<210> 138
<211> 659
<212> DNA
<213> Homo sapiens

<400> 138
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<212> DNA
<213> Homo sapiens

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<212> DNA
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<223> n = a,t,c or g

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<211> 552
<212> DNA
<213> Homo sapiens

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<211> 392
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<211> 1549
<212> DNA
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<212> DNA
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<211> 8849
<212> DNA
<213> Homo sapiens

<400> 160

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<210> 183
<211> 1298
<212> DNA
<213> Homo sapiens

<400> 183
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<212> DNA
<213> Homo sapiens

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<211> 1735
<212> DNA
<213> Homo sapiens

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<210> 186
<211> 669
<212> DNA
<213> Homo sapiens

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<222> (1)...(669)
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<210> 187
<211> 1804
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<210> 189
<211> 863
<212> DNA
<213> Homo sapiens

<400> 189
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<211> 420
<212> DNA
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<210> 191
<211> 988
<212> DNA
<213> Homo sapiens

<400> 191
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cgcacaccac cacacctggc taattttttt gtatttttag tagagacagt ttcactatgt 180
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<210> 192
<211> 967
<212> DNA
<213> Homo sapiens

<400> 192

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<210> 193
<211> 2238
<212> DNA
<213> Homo sapiens

<400> 193

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<210> 194
<211> 3326
<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

<400> 194

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<211> 461
<212> DNA
<213> Homo sapiens

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cctccagtct ctggtgtttg cctaagcttt attagagaca ggtcatttct acctatgtgt 180
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<210> 196
<211> 772
<212> DNA
<213> Homo sapiens

<400> 196

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tctccattcc aactccattt ccacaactaa tgggttcatt ttcttttatt cttgttctgt     240
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gaggctgagt tgggaggacc atttgagtcc aggagttcga gagcagcatg ggcaacatgg     660
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<211> 1408
<212> DNA
<213> Homo sapiens
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<211> 977
<212> DNA
<213> Homo sapiens
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<210> 199
<211> 1912
<212> DNA
<213> Homo sapiens

<400> 199

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<211> 5467
<212> DNA
<213> Homo sapiens

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<211> 2125
<212> DNA
<213> Homo sapiens

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<210> 222
<211> 1947
<212> DNA
<213> Homo sapiens

<400> 222
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<210> 223
<211> 1131
<212> DNA

<213> Homo sapiens

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<222> (1)...(1131)
<223> n = a,t,c or g

<400> 223
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<210> 224
<211> 975
<212> DNA
<213> Homo sapiens

<400> 224
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<210> 225

<211> 1601
<212> DNA
<213> Homo sapiens

<400> 225
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<210> 226
<211> 974
<212> DNA
<213> Homo sapiens

<400> 226
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<211> 666
<212> DNA
<213> Homo sapiens

<400> 227
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cttggg 666

<210> 228
<211> 1918
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1918)
<223> n = a,t,c or g

<400> 228
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<400> 239

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<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<211> 1970
<212> DNA
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<400> 245
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<211> 923
<212> DNA
<213> Homo sapiens

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<211> 4784
<212> DNA
<213> Homo sapiens

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<222> (1)...(4784)
<223> n = a,t,c or g


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<211> 562
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(562)
<223> n = a,t,c or g

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<210> 276
<211> 1600
<212> DNA
<213> Homo sapiens

<400> 276
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<210> 277
<211> 1293
<212> DNA
<213> Homo sapiens

<400> 277
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<210> 278
<211> 1479
<212> DNA
<213> Homo sapiens

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<210> 279
<211> 1790
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1790)
<223> n = a,t,c or g

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<211> 627
<212> DNA
<213> Homo sapiens

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<211> 888
<212> DNA
<213> Homo sapiens

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<210> 297
<211> 675
<212> DNA
<213> Homo sapiens

<400> 297
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aggccaacga gggac 675

<210> 298
<211> 379
<212> DNA
<213> Homo sapiens

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aattcatgtt gcgacccat 379

<210> 299
<211> 887
<212> DNA
<213> Homo sapiens

<400> 299
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<211> 935
<212> DNA
<213> Homo sapiens

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<211> 2283
<212> DNA
<213> Homo sapiens

<400> 301

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<211> 413
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 302
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<210> 303
<211> 681
<212> DNA
<213> Homo sapiens

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<211> 427
<212> DNA
<213> Homo sapiens

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<210> 305
<211> 609
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(609)
<223> n = a,t,c or g

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<210> 306
<211> 608
<212> DNA
<213> Homo sapiens

<400> 306
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gacagtgggc atgagacccc aaacctctgg ctgagaatat tgccctcact taaagaagga 480
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tctactaa 608

<210> 307
<211> 781
<212> DNA
<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(781)
<223> n = a,t,c or g

<400> 307
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tctaccaaaa atacaaaaat tagccagcca tggcggnggg caactgtaat cccagctact 660
cgggaggctg aggcaaaaag gtttgcttgg acccaggagg caaagttggc gtcagcccag 720
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a 781

<210> 308
<211> 1391
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1391)
<223> n = a,t,c or g

<400> 308
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acagaaagga atgtactttg caagaaatgg tagttcatcc taagtttcca aatacttttg 180
gaaggctaat gcagcagctg ggcaaaataa cacacagtac acaaagaaca gtgtatttca 240
cagagtcagt aatgaaaaac tgacagctct ttaggcagga tatgcttttt ttcatttttt 300
taaacaataa ccactttcaa aaacacatgg aaccaagatc atacatggtt ttacaatttt 360
aaaaaatcag attgtacaca ataggttaga atagacaagt tagaattgtc atgattttaa 420
caatcttaaa tctacaattt caactgtact cctttcaata tagaaataac ctgctttata 480
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tcaaaaaact cactaataac aaaattaatg ttcatcaact tcatttataa tcacatttgg 660
cctacaatgc ctaactaaaa tgacacatgt acacaatata cacccccagt gtactaactg 720
gtctcttaca aaaaatctga acaaagcatc ataagcagga cactgggaag aacatgtttc 780
aatgtagaca tcttttaaaa atgcattaat acttacatat caaaattact agataaaagc 840
agcagcactc tgctgacatt tggcttaaaa ataaatgaat gaatgaagca atttcacagg 900
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<210> 309
<211> 874
<212> DNA
<213> Homo sapiens

<400> 309
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tcctagggtt ttttggtttt gttttgttgc caacgaggaa cacagctctg gggggaatggt 180
gtcatccacc tcgctttaaa aataagcaca tgatggctgg gcaccgtggc tcacgcctgt 240
aatcccagca ctttgggagg ctgaggcggg tggatcacct gaggtcggga gtttgagacc 300
agcctggcca acatggtgaa accccatcgc tactaaaaat ataaaaaatt agctgggcat 360
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ccgggaggtg gaggttgcag tgagctgaga tcgcaccatt gcactccagc ctgggcaaca 480
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gaaatacagc atgcagacca aacaaaaatc tccacagtca ctgaactcat attctagtat 780
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tgggaattcc gccacacgaa ctagggatct cgat 874

<210> 310
<211> 802
<212> DNA
<213> Homo sapiens

<400> 310
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tgttttggag ttatctaggt acctaataaa tgcctgtttt tacagcccat gttcacagcc 180
cattgagaaa tagacaaagt gggtaaggca gatgaatgaa aacatgtcag ttttattact 240
gataatgtac tgcaattgga gaatgtggtc agatattcca aacttcctat gactgcacac 300
tgaagagtct tctctttgga ggggagaaaa ataatgctcg tggctgtttt taaaattatg 360
tttattatat atttattaaa agaaagataa tatttagaaa aaaatctcat tagtcaagta 420
aaattttaga tactctatct tgaaaaacct tctgaaaaca gtataaaaaa tatttgagat 480
atgtcagtat aacatagagc aatattcgat tctccctcct tggggcagca aatattttct 540
gaaaatcaaa agtacagaat cttttaggca ggaaatacat tttggccaat tataatttta 600
gaagtcaaaa ttgttaaggt ttttggacca agcacaatgg ctcacgcctg gaatcccaac 660
actttgggag gcttgaggca ggcacttcac ttaaggtcaa gagttcagaa ccagcctggg 720
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<210> 311
<211> 352
<212> DNA
<213> Homo sapiens

<400> 311

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aacaggagca ccatttcctt gagctcctcc acgccaaggc ctgtgagcac catggggagc    180
aacaccttta ccaccttcaa tacaagcagt gctggcattg ctccaagctc taacttacta    240
agccaagtgc ccactgagag tgtatggatg ccacccctgg ggaatcctat tggtgccaac    300
attgctttcc cttcaaagcc caaagaggcc aatcggaaaa aactggcaga ta            352
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<210> 312
<211> 1267
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1267)
<223> n = a,t,c or g

<400> 312

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gcaaaagtgc aaatttgatc atgctgttct tctgctccag atttttcagt ggcttctcaa    180
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ttgtctgcct gtctgtccta aaacacacct ggctcatccc atgctagcaa cattggcctt    300
tgtgtcactt cttgaatatg ccaagcattg cctcagggac ttcatacttg tgtcctttct    360
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aatcactaaa tcaatcctgc cttatttaaa gagaaatctc acttctctct gcagttttaa    480
atttttttta gatttattt taggttcaga ggtatatgtg caggtttgtt atataagtaa    540
attgcatggc atgggaattt gctgcataaa atatttcatc actggggtga taagcagaat    600
acctgatagg gaactttttg atcctcaccc ccctcctgcc ctccgtcttc aagtggcccc    660
tggtgcctgt acctcccttc tttgtgccca tatggattta aaggtcacct cccacttgga    720
agtgagaaca tgtgggcctt gccttggtgg tccctggccg agccttcgcg accacgggaa    780
ttaaaacagt gtcttttctc tcaccgtgag aagcctgcaa actgccggtc cgcgaggggg    840
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acgacctcgg cattttctgc gttcctcgct atcccaccgc cctgtgggaa aactccggtc   1080
gtccggcgnc cggcgcggtc tcacctataa cgtcccgcat acgccggaga gacagaccta   1140
taacctcgca tattcgcgcc atccgcgcaa ttcgcacgca aaccgatcct aaccacccgc   1200
gccatcgcgc gcgattccaa ctgcgctcgt ggccctaggg cgcgggaaac tccgcggctt   1260
cgcgtct                                                             1267
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<210> 313
<211> 1927
<212> DNA
<213> Homo sapiens

<400> 313

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aactaaaaag tcaactaaac agttggtttt agctagagac aaacatcagt cactgccacc    180
aaattccatt atataaattt attttgcttc acatttaagg agaaacccag cagaggggtc    240
gccctgctct tccccactag aaatgtactg aaaagtgaca agcccacaga aggaaaggct    300
gtataaggaa gtaggagctt cagtcaaatt tctactttca ttaccctgag ggaggtgaag    360
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gagggtgtta ttttcatcag gtcaacatgg atgacagttt gatcataaaa aacagcccac    420
attaagattt catttgtgaa atatggtgag catgatcatg ccctaatgat ttcttagggt    480
ttggcagtgt ctctggtcac atgcccatac ttagggttga aagaaatgct aatactgtac    540
cctgggtctt cctcagatgc cacagtggct cctgccctag gatgactaaa aatacggctc    600
tcctttcctt agagatactg gctcactatc aagaatagag gtagggaggc attgtgaact    660
ccagaagagt tgagtctatg gagtttattc cacagtggat acattaggct ttttagagct    720
acaatgagac tgtcagtaat aggcgatcac ctttttatac ctatgaaaca tttcttaaaa    780
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gaaacacaat cataaatttc ctgggcagta aatttgacat ttttatttac ctcatacttg   1080
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tgtggaagaa taccatcata atttgacctt gtactgaaag catgtaacaa acttctagaa   1560
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aggatctcca tccaaaggtt tccaaaagca attttcattt ctgtttctaa tattgaagat   1800
aaacctgttc caagagattt ttcaagatca gatacaatgc tctcaagcag aatggacagt   1860
ccagaatttg tagattcctc cttatagctc tctttcaagg gtgttgtttc tgctcgtgcc   1920
gaattcc                                                             1927
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<210> 314
<211> 535
<212> DNA
<213> Homo sapiens

<400> 314

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aggacccagt aagaagagct atttttcaaa gagagaaaag ttatttgcaa aagataacat     60
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gctccataca gtatctctat ctgccttgga cacttcaggc atatgtgcca tatatgacag    180
aacatcttgc acaacagtct gaatttgctg caacccttct cttgctctgg gccccactca    240
aaaccggcag acttacaaat tccttcgtaa atgggccagg gcagcatggt aaaatgtgct    300
gtatattacc tcctaaaacc cccgtctcta ctaaaaatgc aaaaattggc cgggcgtggt    360
ggtgcacgtc tgtaatccca gctacttggg aggctgacac aggagaatcc cttgaacctg    420
ggaggtaagg ttgcagtgag ctgagatcgt gccaccgcac tccagcctgg gtgacagagt    480
gagacttcgt ttcaaaaaat aaaattttta aaatgcagag ggccatcctg ggcag         535
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<210> 315
<211> 797
<212> DNA
<213> Homo sapiens

<400> 315

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cttgcagtct cagcttctct ggaggttgat gcaggggaat cgcttgaacc cggcgggtgg 240
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tgaatggcat taaattcttt ctgtctcagt cagggctgtg cacatacctg gtatcttcca 720
ctgaactgct cctctcttag ctctgtatag ccagctcctt ctcatacttt gtcgtaactt 780
aaatattaat agaggct 797

<210> 316
<211> 915
<212> DNA
<213> Homo sapiens

<400> 316
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tcacccaggc tggagtgcag tggtgcaatc atggctcact gcagatttga cctcccgggc 180
ttacatgatc ctttcacctc accccaccga gtagatggga ccagaggtgt gcaccatgca 240
cccctaattt tttaattttc ttgtagagat ggggtctccc tatgttgctc aagctattat 300
tattttaaat atttttctg tttctttctc ttctctttgt ttctcttctc tttcttgcat 360
ccccattatg tgtatgttat tttttttca tagttgtcgc acagttcttg aatagtctgt 420
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cctcaagcgt agagattctt tcttcagcca tgtccattac actcatgggc ctatcaaagg 540
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<210> 317
<211> 6248
<212> DNA
<213> Homo sapiens

<400> 317
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<210> 318
<211> 402
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 318

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<210> 319
<211> 635
<212> DNA
<213> Homo sapiens

<400> 319
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<210> 320
<211> 1311
<212> DNA
<213> Homo sapiens

<400> 320
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<210> 321
<211> 867
<212> DNA
<213> Homo sapiens

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<210> 322
<211> 1144
<212> DNA
<213> Homo sapiens

<400> 322
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<210> 323
<211> 366
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(366)
<223> n = a,t,c or g

<400> 323
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tggggt 366

<210> 324
<211> 839
<212> DNA
<213> Homo sapiens

<400> 324
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tgtgtacaga tcatagtctg aagtggaata agcagaatgt tgtcctcagt gtgagatgtt 180
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<210> 325
<211> 677
<212> DNA
<213> Homo sapiens

<400> 325
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aactaataat aaaaaaaatt agctgggcat ggtggcacac gtcctgtagt cccacctacc 600
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atcgcaccac tccactc 677

<210> 326

<211> 517
<212> DNA
<213> Homo sapiens

<400> 326
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<210> 327
<211> 992
<212> DNA
<213> Homo sapiens

<400> 327
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tcgcccccgc gcaacaatat atctatccgc cc 992

<210> 328
<211> 894
<212> DNA
<213> Homo sapiens

<400> 328
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<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(423)
<223> n = a,t,c or g

<400> 329

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<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<213> Homo sapiens

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<213> Homo sapiens
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<213> Homo sapiens

<400> 355
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<210> 356
<211> 403
<212> DNA
<213> Homo sapiens

<400> 356
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gcagacttcc ctggaaagtg ttgcacctca taaagacagt atgagcctga aaagtgagca    360
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<210> 357
<211> 794
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 357

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<210> 358
<211> 4341
<212> DNA
<213> Homo sapiens

<400> 358

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agtttctctt cataaacaat gtcaaaacaa aaagttttga attacaaaat gttaaaaaat    180
atgtcggtac ttaacagttt cactaatgca taaagttaca gatattttct aaagaaaaat    240
aattgtgcca cttacctata tttgctgttt ctatgaactt ttttattctg tacataggac    300
atttgtaca aaatatgaag tctacatttt tattacttat taccataaaa caaagataca     360
atgtatgtac aatattaaaa ggaagccata ctaaagccac actaaaaaga cacttggaat    420
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tagtttctct gaaaactttt atttttcttt ttggtgagtg tttgtcttca ataaagagca    720
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<211> 652
<212> DNA
<213> Homo sapiens

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taaggataat caccataata cttctggagc ctaggactaa taacctggat ggggagaagg 180
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atcttgttat gtggcccatg ctggactgga actccggggt tcaagggacc ctccctatta 540
accctcccag gtagccggga ccacaggggc acaccacctg gccgagatcg tcatgtttct 600
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<210> 360
<211> 681
<212> DNA
<213> Homo sapiens

<400> 360
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gttttgaatt ccaggcaaaa aaagtttatt cttgtatgta ggtgcttcag aaagcaaaac 180
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agcctgccca gcatggagaa accctgtctc tgctaaaaat gcaaaaaatt agccaggcgt 600
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ctgagaggtg gaggctgcat a 681

<210> 361
<211> 1221
<212> DNA
<213> Homo sapiens

<400> 361
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gttggtgtct ttttttccct tcctctggat tgtgaggaac tgaagtcttt aaatgaatca 180
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acacacttct ttctcaacgc aggaaaccct ctgcgacctt aactatgggg aggggcccca   1140
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<210> 362
<211> 684
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(684)
<223> n = a,t,c or g

<400> 362

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<210> 363
<211> 933
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(933)
<223> n = a,t,c or g

<400> 363

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aataaaccca gtcccagtag gcaacgaggg tgggcctaaa tgtgggcgga tggtgggaag    720
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<210> 364
<211> 777
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(777)
<223> n = a,t,c or g

<400> 364

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ctcaaaggga gattcctgac attcagcctt tgtcttagcc tgctcttttc ctcactatga    420
caagaatgat cctctctcag gtgtacaggt atgtttgcat ctggcttacg catgtctgca    480
caataaacgg actgcagcac ctgccatccc taaggcagca gatggtgcac aagacatcat    540
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ttgttgtgaa gggcaccaat caaggggctg ataccttct tgataaaaat tatggagggg     720
tggtaacccc aaaaaaaaaa tcagcgggcc cttagccttt tggaggggcc gtgaacg       777
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<210> 365
<211> 1157
<212> DNA
<213> Homo sapiens

<400> 365

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aaa 1083

<210> 375
<211> 710
<212> DNA
<213> Homo sapiens

<400> 375
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catcagttct aacaacttat ttaaaaatat ttaattatag aattgttaga aaatactgcc 360
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gggaggctga ggcaggaaaa tcgcttgaac ccgggaggcg gaagttgcat 710

<210> 376
<211> 374
<212> DNA
<213> Homo sapiens

<400> 376
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ccaccctgcc gttcagcgga ggccatgctc tggtgaggcc ctgcataatc cggagcctgc 300
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gtccttgacg actg 374

<210> 377
<211> 396
<212> DNA
<213> Homo sapiens

<400> 377
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tgacagatct taccaaagtc cacacggaat gctgccatgg agatctgctt gaatgtgctg 180
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tttgcaaaaa ctatgctgag gcaaaggatg tcttcc 396

<210> 378
<211> 638
<212> DNA
<213> Homo sapiens

<400> 378
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gagatagata taatgtaagt gaccaagtct cttggacaag tattgtctct gatcaatccc 180
tgccaaactc ctttccttgg ttaactcaag tggttagatc ttactccctg aacagaagga 240
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actggagtac agtggtgtga tcttggctta ctgcaacc 638

<210> 379
<211> 3043
<212> DNA
<213> Homo sapiens

<400> 379
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ctgagagatc ctaagagcta gtatgttgta aaacctgcca cctgaataaa atgaaaaaaa 180
aagtgttttt ttgagacaga gtcttgctct gttgcccagg ctggagtgca gtggtgtgat 240
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agacggggtt tcaccgtgtt agccaggatg ttctcgatct cctgacctca tgatccgccc 420
gcctcggccc cccaaagtac tgggattaca ggcgtgagcc accgcgcccg gcccatttac 480
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aggaagtact caatatttcc tttctttttt tctttttttt ctgagacgga gtctcgctct 600
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ttaaacccgg ttaatcaccc tcgaggggc  ctttttagtg gccacccttt ggtggtgggc   3000
ccttccccgg gccttttttt gacctggaag ggcccctctc ccg                      3043


     <210> 380
     <211> 497
     <212> DNA
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(497)
     <223> n = a,t,c or g


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gtctcacatg gactgctgga gagtcaacgg gaccctggcc gtctccagag ccatcggtga    180
gagccaaaga ggccgaccca agtgggagaa ggtctctcgg aagcccaggc ctcgagtgtg    240
gcccgcggct caccaggggt tcagggaggc agtgtgatgg gccgaggggg atttgtcatg    300
cactggggtg ataccctcgt agtgtgaagg gaacagggca gattcagaga ctgcagcacc    360
agtgtctgag tgtaagatac actgtatgtt attatctcac ctaaaacagc tcctacaaat    420
ctcatagaaa cctgtggctc accaccctat gggctggaag tagagctttc aatattccgg    480
agatgaggtt tatcctg                                                   497


     <210> 381
     <211> 777
     <212> DNA
     <213> Homo sapiens


     <400> 381
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atcaaaaggc atttacatgt gttgttttaa ctcttctttt ttgatcacac aaagtaggta    120
gaaaagatct gctgaaatag agcaaatcag aaaccaagta gtgtaaggca ttaggagata    180
catgaagaga atcgctattt gcttcttgta cagcgtgtgg caagtcatgg ttagtagtca    240
tcgtagttga cgctggctcc atgcctaaag ccgtaggggc tccggggacc aattgcagag    300
tcttcatcat agtgacgttg gtagtaatcg ccatagtatt catgtccatt tcgatctctg    360
ttaagccaat aggtgatgtc atcttcaaat ttcgcttcgt caaagcccat gtagagaaac    420
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gggccccagc acaggagcag gagcagcgcc agcccggtca gggccaggac agcaggccgc    660
gcgggggagg cagccatggc ggcggggcgc gagcaggagg gcgaggggcg cacttcgagg    720
tgctgcgagg gagaaccggg cgcgggagag gggtgcgagc gtggcaggcg cggccgc       777


     <210> 382
     <211> 659
     <212> DNA
     <213> Homo sapiens
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<400> 382
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agggaagtac ccctacttga taggcctcaa gccctccctc cttgtgtcca gatcctttca 180
gcacctgcct ccacgtcctg cccctctgcc ctctctccct ggcatgatcc tggccttcca 240
gtcacatccc aaaatcactt tgcctggttt cctttgggaa gcaaagcctg tctggggccc 300
tccatagaca gagaagctgt gaaggagata aatgctgaag aaggggtgag gagacagact 360
caggggccaa tcaaagtcag gaaacaggct gggtgtggtg gctcatgcct gtaatcccag 420
cactttggga ggctgagccg cggatgacct gagttcagga gttcgagaac aagcctgccc 480
gcatggggaa aactcatctc cactctaaat acacaaattt accccgcccg tggggcatgc 540
ccgtgtaccc cctactccga aggctgggac aggagaatca cttggaccca gtgagccgag 600
atcgcttcaa tggagtccag ccctgggtga cagagcgaga ctccatctca aaaaaaaa 659

<210> 383
<211> 392
<212> DNA
<213> Homo sapiens

<400> 383
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catctctaga attgaattta tttgtttgtg tgtttgtgtt tttttcaggg tgatttggtt 180
acctgtggaa ttttatctgg aaacaaaaat tttgaaggtc gtctttgtga ttgtgttcgt 240
gccaattatc ttgcctctcc acccttagtg gtagcttatg ccatagcagg cacagtgaat 300
atagatttcc agacagaacc tttaggtatc ttttccttta tgtatatgta tacctacaca 360
tacttttccc aatggaagtc gttatatttt tg 392

<210> 384
<211> 853
<212> DNA
<213> Homo sapiens

<400> 384
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cttgtctagc tcctgctctg actgagtgta aatcttctca tgtgtggaaa atgggtataa 120
tcatgcttct cagagaggtg gtatgaggat taatcaccgt catggatgta acatacttag 180
attgagccca gcccaggagg agaagtgagc tgatggaagc atggaaggcc ctgataggtt 240
tattcccctt gcgaagttct gcttccccct tcacatatca ctgctgggag ccagcccagc 300
ctgcccacca ggaatttcat tccaccatag ctcttagagg ccgaggtggg aaacctcaag 360
aagagagcag tccatgaggg gttttggagt agggactcgg aagagggaca aggatggaaa 420
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acacctgtaa tcccaatact tttgaaggct gaggcaagag gattgtttga tcccaagagt 660
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ggcgttttta gaaccccaat ttgcgcccgc ggcagccaat gtacctcttt ttatggccca 780
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<210> 385
<211> 965

<212> DNA
<213> Homo sapiens

<400> 385
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catctaaaat gaagtaagca ttttagagct aaattagaga agggataatt ccccattttt 180
cattccatgc ctcactctgt ccttctttat gcccaatgtc cctgaatcca gaatttctct 240
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caatttttgt catggggcgg ttctcagcca ctgaaacccc actagaaagg aattaatata 720
tatacttgag cagacattgg cctaaggttt gcccttcttg ggtaatagg caatattaca 780
ggtccgttcc cggggacggg gagcgccctc cgggacccac aagacccccт gaattctggc 840
cgcgttggcg gggcggtaaa cgagactccc tcgtcccctc cctcagattg ggacacgcc 900
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<210> 386
<211> 422
<212> DNA
<213> Homo sapiens

<400> 386
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gc 422

<210> 387
<211> 435
<212> DNA
<213> Homo sapiens

<400> 387
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aaaaattagc tgggg 435

<210> 388
<211> 473
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(473)
<223> n = a,t,c or g

<400> 388
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aaacacagag cctgggaaca cccaggagag catgtccccc agggtcccag ccccaaccga 360
agatgggaga gcccaaaacc tcccgccacc cagtcctcct tnngccccac gaaatcgtcg 420
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<210> 389
<211> 376
<212> DNA
<213> Homo sapiens

<400> 389
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agaagggaat cgaattctac agtgatctta tcgatgccct tctgagcagc aacatcactc 360
ccatcgtgac cttgca 376

<210> 390
<211> 906
<212> DNA
<213> Homo sapiens

<400> 390
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gttttcagga aaagcctcct tgaaggataa aagccggagg gcagcttata tattgcaatt 780
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cgcttc 906

<210> 391
<211> 680
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(680)
<223> n = a,t,c or g

<400> 391
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gatgcgtggc cttctggcca ggcgtctgcg aaatcatatg gctgtagcat tcgtgctatc 180
cctgggggtt gcagctttgt ataagtttcg tgtggctgat caaagaaaga aggcatacgc 240
agatttctac agaaactacg atgtcatgaa agattttgag gagatgagga aggctggtat 300
ctttcagagt gtaaagtaat cttggaatat aaagaatttc ttcaggttga attacctaga 360
agtttgtcac tgacttgtgt tcctgaacta tgacacatga atatgtgggc taagaaatag 420
ttcctcttga taaataaaca attaacaaat acttttggac agtaagtctt tctcagttcc 480
taatgataat gcagggcact tactagcata agaattggtt tgggatttaa ctgtttatga 540
agttacttga nttccgtgtt ttgttaaatt tcaatggtcc tagacatcct taactgtgan 600
agttgtccgt tcantgcagt acttggcctg ggnatggatt aaagtgtccc atggccngta 660
agacactgtn cgggggccca 680

<210> 392
<211> 1983
<212> DNA
<213> Homo sapiens

<400> 392
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aattctccac tttaccaata cttacaggat ctgggacaca cagactttga aatatgttct 120
tctttgtcac caaaaacaga aaaatgcaca acagagggac aacaaaagcc tcctacaaga 180
gtcctaccaa aacaaggtat cctgttaaaa gtggctgaaa ccatcaaaag ttggattttt 240
ttttctcagt gcaataagaa agatgactta cttcacaagt tggatattgg attccgactc 300
gactcattac ataccatcct gcaacaggaa gtcctgttac aagaggatgt ggagctgatt 360
gagctacttg atcccagtat cctgtctgca gggcaatctc aacaacagga aaatggacac 420
cttccaacac tttgctccct ggcaacccct aatatttggg atctctcaat gctatttgcc 480
ttcattagct tgctcgttat gcttcccact tggtggattg tgtcttcctg gctggtatgg 540
ggagtgattc tatttgtgta tctggtcata agagctttga gattatggag gacagccaaa 600
ctacaagtga ccctaaaaaa atacagcgtt catttggaag atatggccac aaacagccga 660
gcttttacta acctcgtgag aaaagcttta cgtctcattc aagaaaccga agtgatttcc 720
agaggattta cacttttgct tgacagggtc agtgctgctt gcccatttaa taaagctgga 780
cagcatccaa gtcagcatct catcggactt cggaaagctg tctaccgaac tctaagagcc 840
agcttccaag cagcaaggct agctacccta tatatgctga aaaactaccc cctgaactct 900
gagagtgaca atgtgaccaa ctacatctgt gtggtgcctt ttaaagagct gggccttgga 960

BNSDOCID: <WO_______0154477A2_I_>

cttagtgaag agcagatttc agaagaggaa gcacataaac tttacagatg gcttcagcct 1020
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gttagcccta ttactttcta cagccaattc acctcctggg cccttactta ctccagcact 1140
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tttggaagag cttaagcgca gctatgagtt ctatcggtac tttgaaactc agcaccagtc 1260
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agcagtgcgt agcttgcagc tccatctgaa agcattactg aatgaggtaa taattcttga 1380
agatgaactt gaaaagcttg tttgtactaa agaaacacaa gaactagtgt cagaggctta 1440
tcccatccta gaacagaaat taaagttgat tcagccccac gttcaagcaa gcaacaattg 1500
ctgggaagag gccatttctc aggtcgacaa actgctacga agaaatacag ataaaaaagg 1560
caagcctgaa atagcatgtg aaaacccaca ttgtacagta gtacctttga agcagcctac 1620
tctacacatt gcagacaaag atccaatccc agaggagcag gaattagaag cttatgtaga 1680
tgatatagat attgatagtg atttcagaaa ggatgatttt tattacttgt ctcaagaaga 1740
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tgtgctggga tttaaagctt cagaggcaga aaggcagaag tggaagcaac ttctatttag 1860
tgatcatggt aagcactgac tttaaagtaa caggttattt caatgtaggg gattctttct 1920
ttcttgaacc atgaatgtta ttttagctga agaattcttg gggttttata agggtccacc 1980
agg 1983

<210> 393
<211> 859
<212> DNA
<213> Homo sapiens

<400> 393
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tccaacctaa agccctaaag ggtgggttca aatcaacctt tttctttaaa cccttcgggg 120
gttttttttt gccccaagtg gaaaaaattt tttttttgaa ttgttaaaaa caaaaaactt 180
gatttttgcc cttttttttt ttggcatttc acttgtggct tgctttatgt tcttaatttc 240
tcctaagaga ttgtaaactc atgagagatc tggcctagtg ttcttaactt ttaatcccca 300
aagtgctttg tacacagtat ggctcaatac atgcatttat atggcacagg aaaaatgtac 360
ttaagatgtt gggtggcttt taccaacata gcatgtcatt actgactcat cgatgctcac 420
tggaaaagct tgctcccaga gccatgtccc caggactctc tactaggtag ccaccaaact 480
gccaaagacc ctatcctatg caagtcacat aaattgtctg tttgtagaaa ttctttcttt 540
ttttcttttt ttgagatcga gtctcactct gttgcccagg ctggagtgca gtggtgtgaa 600
cttggctcac tgcactacct ccgcctcctg ggtttaggca attttcctgc ctcagcctcc 660
caagtagctg ggattacagg tgcgtgccac catgcctggc taattttgt atttgtagta 720
gagacggggt ttcaccatgc tggccaggct ggtcttgaac tcctgacctc gtgatccgtc 780
ctcctcggcc tcccaaagtg ctgggattac aggggtgagc caccatggcc gggcgggagc 840
catgtctgac acagactcc 859

<210> 394
<211> 1407
<212> DNA
<213> Homo sapiens

<400> 394
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gctgctgaga tttgggagtc tgcgctaggc ccgcttggag ttctgagccg atggaagagt 120
tcactcatgt ttgcacccgc ggtgatgcgt gcttttcgca agaacaagac tctcggctat 180
ggagtcccca tgttgttgct gattgttgga ggttcttttg gtcttcgtga gttttctcaa 240
atccgatatg atgctgtgaa gagtaaaatg gatcctgagc ttgaaaaaaa actgaaagag 300
aataaaatat ctttagagtc ggaatatgag aaaatcaaag actccaagtt tgatgactgg 360

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aagaatattc gaggacccag gccttgggga gatcctgacc tcctccaagg aagaaatcca    420
gaaagcctta agactaagac aacttgactc tgctgattct tttttccttt ttttttttttt   480
taaaaaaaaa tactattaac tggacttcct aatatatact tctatcaagg ggaaaggaaa    540
ttccaggccc atggaaactt ggatatgggt aatttgatga caaaaaatct tcactaaagg    600
tcatgtacag gtttttatac ttcccagcta ttccatctgt ggatgaaagt aacaatgttg    660
gccacgtata ttttacacct cgaaataaaa aatgtgaata ctgctccaaa aacagagtca    720
cgtattccac tctccaacta cccacatatt ccttttgcaa tagccattag ggcatcattt    780
tgatatttca ttctgatttc tgattctctg atttctgatt cctaatgagg acagtaggtc    840
tggatccaaa ttctcacagt aaaatcaagc agtaattttc tctcatatct attagggaaa    900
gaaaaatgat cacagtctgc taagagtctt gattttcttt gtaatgcctc acatagtatg    960
ataatcagtc tccaaagcat cacatgataa ttacaatgat accattaaca tgtcaaggaa   1020
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caaatttgtt cagtaaatcc atagatgact acatttgag aaatactaag ataatactaa    1140
aaattatgcc ttagcataat ttgcatgcaa aattgccctc tagtgttttt gttttgtttt   1200
gagacatagt ctcgctctgt tcgcccaggc tggagtgcag gggcacgatc tctgctcact   1260
gcaagctctg cttcccgggt tcacaccatt ctcctgcctc agcatcctga gtagctggga   1320
ctacaggcac atgctgtcac acccggctaa tttttgtat ttagtagaga tggggtttca    1380
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<210> 395
<211> 319
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(319)
<223> n = a,t,c or g


<400> 395
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tgtgtgggac tactcctttt cagtgtgacc tgggcagcac caacatttca accacagact    120
gagaaaacta agcaaagctg tgtggaagag cagaggcagg aagaaaaaaa caaagacaat    180
attggttttc accatttggg caagagaata aatcaagagc tatcatctaa agaaaatatt    240
gtccaggaaa gaaagaaaga tttgtccctt tctgaagcca gtgagaataa gggaagtagt    300
aaatctcaaa attatttcn                                                 319
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<210> 396
<211> 2704
<212> DNA
<213> Homo sapiens


<400> 396
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ctttaaaagg ctccactaac aatacaagaa tattttttcc atacgcagtg acgtgggtgg    120
gtcatgggtg tctcaatgac agtaacgttc ccgaaccccg gaccttagct gtcatttcac    180
ctgcgtcgtc ccggacgcca tttggctgtt gacgtggttc cgagccagca aataacgcca    240
gcagccctcc cagatccacg ccggcccgtc tctccgccgg ccccctcctc gcagtggttt    300
ctcctgcagc tcccctgggc tccgcggcca gtagtgcagc ccgtggagcc gcggctttgc    360
ccgtctcctc tgggtggccc cagtgcgcgg gctgacactc attcagccgg ggaaggtgag    420
gcgagtagag gctggtgcgg aacttgccgc ccccagcagc gccggcgggc taagcccagg    480
gccgggcaga caaaagaggc cgcccgcgta ggaaggcacg gccggcggcg gcggagcgca    540
gcgatggccg ggcgaggggg cagcgcgctg ctggctctgt gcggggcact ggctgcctgc    600
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gggtggctcc tgggcgccga agcccaggag cccggggcgc ccgcggcggg catgaggcgg 660
cgccggcggc tgcagcaaga ggacggcatc tccttcgagt accaccgcta ccccgagctg 720
cgcgaggcgc tcgtgtccgt gtggctgcag tgcaccgcca tcagcaggat ttacacggtg 780
gggcgcagct tcgagggccg ggagctcctg gtcatcgagc tgtccgacaa ccctggcgtc 840
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gagacaattg tcaacctgat ccacagtacc cgcattcaca tcatgccttc cctgaaccca 1020
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agcaatgccc agggaataga tctgaaccgg aactttccag acctggatag gatagtgtac 1140
gtgaatgaga aagaaggtgg tccaaataat catctgttga aaaatatgaa gaaaattgtg 1200
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ccttttgtgc tttctgccaa tctccatgga ggagaccttg tggccaatta tccatatgat 1320
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cacgatgtta catccgcaaa ggatggtgat tactggagat tgcttatacc tggaaactat 1800
aaacttacag cctcagctcc aggctatctg gcaataacaa agaaagtggc agttccttac 1860
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ttctagttag ctgctttaaa tctatctata taatgtagta tgatgtaatg tggtcttttt 2040
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tcaactttcc ttaaaataaa tagcctctta ggtaaaaata taagaacttg atatatttca 2160
ttctcttata tagtattcat tttcctacct atattacaca aaaaagtata gaaaagattt 2220
aagtaatttt gccatcctag gcttaaatgc aatattcctg gtattattta caatgcagaa 2280
ttttttgagt aattctagct ttcaaaaatt agtgaagttc ttttactgta attggtgaca 2340
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ataagcatga tcttgttaat gcatttttga tgggaagaaa aggtacatgt ttacaaagag 2520
gttttatgaa aagaataaaa attgacttct tgcttgtaca tataggagca atactattat 2580
attatgtagt ccgttaacac tacttaaaag tttagggttt tctcttggtt gtagagtggc 2640
ccagaattgc attctgaatg aataaaggtt aaaaaaaaat ccccagtgca tgttaaaaaa 2700
aaaa 2704

<210> 397
<211> 1743
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1743)
<223> n = a,t,c or g

<400> 397
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tggccccaaa ggagctcctt aagccaaagt acttggtaca aagagaccca tattcctata 180
aacatgttaa gtttgttcct aagcattcca gacttttaga ataagaactt catttccaac 240
ttttttattt attaacatgg ggctaaactt ttaagaaaca accctaggtc ttctatttcc 300
caggagctgg ttcaaagtct taaatgacaa tataacttca ttatgaaaat atactgaaaa 360
ggtacaaggg gctgatgtaa aaacggttaa tcaagggttc ccaggcatcc atggggactt 420
aagggtaacc tgaaagaata acccccagcc caggctgcaa ccagccaggc caggatgtgc 480

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tggcttnacg tngatgaggt gctaaggccc atcgaatgcc tcagaggaaa gccggattca    540
cgggggatca tctcaaccct gaggaaatcg gttccttggg gggtgatttc ttgccctttt    600
ttttgttttt gtaaggaaga gggttccctt cattccagta actttagttt tcccttaata    660
aatattttca aaaataaaac caatcatcat ccaaacaaac agggagccac ttttgtaggg    720
taagggtaaa tcacaggata atgtattggg ataactctgt ttttttaaaa taaaaaagcc    780
ttacatggtc agggattgat ggagtgggga tgacaaatgc acatttcaga ctttcatcac    840
caatgaaaaa ataaagcatt ttcatagact taaaactgtc attagtgcat tcggcttttg    900
gagaagggat gaaaatgtaa aatacttcta caacaataaa atgttaatag aaatcgtcat    960
gtgctgaggt cattttaggt gagctaccat tgtttgttta aatacaagaa aaagtaattt   1020
ccttggtccc aatttaagtg gaaatccttt aaaaaagatt gcctttaaaa gaaccattat   1080
ttgagggaca atgttttttc cagacacatt cctggatgat attccaaatt cacttccata   1140
acaatccaca gattaaccct tttaattcca cctttcctta aaaagctgtc agatttccca   1200
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ttcattatta ttaaggaact tcataccata ttagagagat tgccattcat tgctttcctc   1320
gtctttttcg gaaaagacac aggccagact ttgcttaggc taaagctgac gtctttaaag   1380
gcatgcaaca agaatatccc cccacaatga ttgtaaagaa gccacttcaa agtaccaatg   1440
gacatcgtca acaggcatat cttgccactc cttaaaaaga atagctgaac aagttaaaac   1500
tgatgttgta aagaatacat aatatattgg agtcacaatg gaagtgttga atatatccag   1560
ggccctattt aggtaattaa tctgtgtgct cacacagacg atgaggctca gcagcagaat   1620
ccaagccagg ggatgccgca gcacaggctt ccctgcaaac agctccttga tagcaatgcc   1680
caggcccttc acacaggaga ctgaaaacgc gccgattaca gagcagattg ttatgtacac   1740
aag                                                                  1743
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<210> 398
<211> 315
<212> DNA
<213> Homo sapiens

<400> 398

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ccaaggagct cccttgggtg ctgctggctc ctaattagtg taacctgtta atcacatgtt    120
gctcggtgtt agagcggtcc ctctgtgctc tgcctggcag ggcgctgttg gcctggtctc    180
cctcactatt tctatttgca agcatgggct ttctttccag cagaatctgg ttcctgggaa    240
gagtaatgtt ccaaaggcct ctgatatgcc tcgatgccct cctgtcgacg cggccgcgaa    300
ttccagatct atgaa                                                     315
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<210> 399
<211> 397
<212> DNA
<213> Homo sapiens

<400> 399

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gagaaggggg actcctcata ctctgctggt gggagtggga aaaggtgcag ctgctgtggg     60
aaagtggcag ttcttcacaa agttaaacat agagttacca ttggacccat caatgccact    120
cctaggtgaa tccaggaatt cactcaggag aagtgaaggc atacattcac acaaaaactt    180
gagcagcata attcatgttc tgttttccta caaatccagt ctttgacttc aaggttataa    240
gccacagaaa atactctgtg agtgatgacg tggggaatgt gtttggatag gatcactagg    300
gatgcaggca acaaaggaca atgacacatg ctttggggtt tctgtgtttg ttttttttcc    360
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<210> 400

<211> 4175
<212> DNA
<213> Homo sapiens

<400> 400
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agcggagcca tgggggacgc tcccagccct gaagagaaac tgcaccttat cacccggaac 180
ctgcaggagg ttctggggga agagaagctg aaggagatac tgaaggagcg ggaacttaaa 240
atttactggg gaacggcaac cacgggcaaa ccacatgtgg cttactttgt gcccatgtca 300
aagattgcag acttcttaaa ggcagggtgt gaggtaacaa ttctgtttgc ggacctccac 360
gcatacctgg ataacatgaa agccccatgg gaacttctag aactccgagt cagttactat 420
gagaatgtga tcaaagcaat gctggagagc attggtgtgc ccttggagaa gctcaagttc 480
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tccgtggtca cacagcacga ttccaagaag gctggagctg aggtggtaaa gcaggtggag 600
caccctttgc tgagtggcct cttatacccc ggactgcagg ctttggatga agagtattta 660
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gactttgctg ctgaggttgt acatcctgga gacctgaaga attctgttga agtcgcactg 1080
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gaaccacgga ctgtggtgag cggcctggta cagttcgtgc ccaaggagga actgcaggac 1380
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ccggcaggct ctgctcctgg tgagcacgtg tttgtgaagg gctatgaaaa gggccaacca 1560
gatgaggagc tcaagcccaa gaagaaagtc ttcgagaagt tgcaggctga cttcaaaatt 1620
tctgaggagt gcatcgcaca gtggaagcaa accaacttca tgaccaagct gggctccatt 1680
tcctgtaaat cgctgaaagg ggggaacatt agctagccag cccagcatct tcccccctto 1740
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agaaatctgg tttcaatata actcatttaa aaatttatgc cacagtcctt ataattggaa 2040
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gcagaatgaa tggcagagag tgattctgtc ttcatagagg gtggggtact tctccataag 2400
gcatctcagt caaatcccca tcactgtcat aaattcaaat aaaatgtctg aacaagggtg 2460
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<212> DNA
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<223> n = a,t,c or g

<400> 401

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<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

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<211> 554
<212> DNA
<213> Homo sapiens

<400> 403
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<211> 538
<212> DNA
<213> Homo sapiens

<400> 405
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<210> 406
<211> 859
<212> DNA
<213> Homo sapiens

<220>

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<211> 452
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<210> 408
<211> 1562
<212> DNA
<213> Homo sapiens

<400> 408
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<211> 3012
<212> DNA
<213> Homo sapiens

<400> 409

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<211> 2516

<212> DNA
<213> Homo sapiens

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<210> 446
<211> 1063
<212> DNA
<213> Homo sapiens

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<210> 447
<211> 488
<212> DNA
<213> Homo sapiens

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<222> (1)...(488)
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<210> 448
<211> 1716
<212> DNA
<213> Homo sapiens

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<210> 449
<211> 1610
<212> DNA
<213> Homo sapiens

<400> 449

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<211> 1509
<212> DNA
<213> Homo sapiens

<400> 450
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<211> 878
<212> DNA
<213> Homo sapiens

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<211> 4710
<212> DNA
<213> Homo sapiens

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<210> 453
<211> 752
<212> DNA
<213> Homo sapiens

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<222> (1)...(752)
<223> n = a,t,c or g


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aatcccagat gcagatctgt ggatccagcg tagcatctgt agcagctggg acatcattcc    180
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ggcatttaga atggggnaca aacacnaaaa acacaagggt tttttttta gggggcgcgg    660
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<210> 454
<211> 765
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(765)
<223> n = a,t,c or g

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ccctggggtc tgtggttgcg gtccagcggg ctcctgttcg ccaccttcct gctgctggcc 720
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<210> 455
<211> 1322
<212> DNA
<213> Homo sapiens

<400> 455
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ggtgtggcgc cggcttctgc ggaagaggtg ggtgctcgcc ctggtcttcg ggctgtcgct 240
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cctccaggtt catgaccata atcagcccat cccgtggaaa gtgcagttta acttgggcaa 360
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aa 1322

<210> 456
<211> 1777
<212> DNA
<213> Homo sapiens

<400> 456
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caaggacctt tcatacaggg cagccacacc ttgtccctgt accacctctt cctgaatacg 240
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atggaattaa aaaatatggt ccctttgttg cagactttgc tgataaactc aatgagcaaa 480
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tgggcaacag acctcgactc catctagaaa aaaaaaa 1777

<210> 457
<211> 1322
<212> DNA
<213> Homo sapiens

<400> 457
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cagctatttg ttgtgtcttc gtggaccagc ttggcagcat gaatgctgtg accaacaaga 420
gaggtgtgtc cttcacggag ctgccaggct gggagggagc cctgatggcg tggcttgagt 480

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ga                                                                  1322
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<210> 458
<211> 1842
<212> DNA
<213> Homo sapiens

<400> 458

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tgcaaggcag ttctgctccc catcgtcctc ttgctgactg ggactgctg agcccgtgca    180
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<211> 734
<212> DNA
<213> Homo sapiens

<400> 459
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aaattcactg tccc 734

<210> 460
<211> 620
<212> DNA
<213> Homo sapiens

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<210> 461
<211> 1477
<212> DNA
<213> Homo sapiens

<400> 461
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tttgtgttct tagttcttta gggagaacta agaacttctc cctatttgac ataaaaaaag 180
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aaattatggc ttttcacatt tctagacatt tcttctttct tacttgggtc cctaattatt 360
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cttaaaatcc gtattggtgg attaagccat tcctgatatt ggaccttatt gtcttcaccc 480

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gtgttgtcgt atctttctga gcactctgcg cttttccaca acgtacgcga tcaccggaca    1440
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<210> 462
<211> 458
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 462

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ctcttcgcct gtgtgccccc caccgagtac tgccacggct gggcctgctt tggtgtctcc     180
atcctggtca tcggcctgct caccgccctc attggggacc tcgcctccca cttcggctgc     240
accgttggcc tcaaggactc tgtcaatgct gttgtcttcg ttgccctggg cacctccatc     300
cctggtaaca ccctgggaga ctttggtggg gtaggatctc agatgagcca ggcaggggca     360
acacaggatc ctgccgaaat gagacacgtt cgccagcaag gtggcggcgc tgcaggacca     420
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<210> 463
<211> 1280
<212> DNA
<213> Homo sapiens

<400> 463

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tgggacatca ttttttaagg gtatgttgct tgggagcatt tcctgggttt tgataactat     180
gtttggccaa attcacattc gacacagagg tcagactcaa gaccacgagc accatcacct     240
tcgtccacct aacaggaacg atttcttaaa cacttcaaaa gtgatactct tggagctcag     300
taaaagtatt cgtgttttct gtatcatctt tggagaatcc gaagatgaga gttactgggc     360
tgtactgaaa gagacctgga ccaaacactg tgacaaagca gagctctacg atactaaaaa     420
tgataatttg ttcaatatag aaagtaatga caggtgggta cagatgagga ccgcttacaa     480
atacgtcttt gaaaagaatg gcgacaacta caactggttc ttccttgcac ttcccactac     540
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gtttgctgtc attgaaaatt taaagtacct tttgtttaca agggatgcat cccagccctt 600
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tgtcttaagc agagagttga tgaaaagact taacagactt ctcgataact ctgagacctg 720
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<211> 2290
<212> DNA
<213> Homo sapiens

<400> 464
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tggtaggatc agcaccttgg ttccaggcat cacgccagtc attttatttc catcatcatc 180
cttgtgaaga aatggaagtc tggagaggtg aaatgatgaa ggcaatctgg ccacaaatct 240
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cagactcacc                                                          2290


      <210> 465
      <211> 754
      <212> DNA
      <213> Homo sapiens


      <400> 465
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cttatgcttt tgtgctgtat ggacagtttg gggtctttgg atacattcca gtggctatca    180
agagtattgt gtcctactga gaatttgatt tttgagttga atggatacga attaaatagt    240
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atgggactag ccttatgcgg gaagtctcat tgctgggctc gccgtggttt attttgctca    540
aaccacaaga acgatacctt agttgaagga tgtcatacta agactcctta gcacagtgcg    600
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      <211> 718
      <212> DNA
      <213> Homo sapiens

      <220>
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      <222> (1)...(718)
      <223> n = a,t,c or g


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agggtccnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nctccatgtg cgtccatatt    180
taacatgtaa aaatgtcccc cccgctccgt cccccaaaca tgttgtacat ttcaccatgg    240
ccccctcatc atagcaataa cattcccact gccaggggtt cttgagccag ccaggccctg    300
ccagtgggga aggaggccaa gcagtgcctg cctatgaaat ttcaactttt cctttcatac    360
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gcgagctctc aaatccctct ccaactgcct aaagcccttt gtgtaaggtg tcttaatact    480
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nnnnnnnnnn ttcccaaaat gggggaaaa acctttgcat atggccgaat aaaccccacc     660
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      <210> 467
      <211> 4710
      <212> DNA
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<213> Homo sapiens

<400> 467

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acagatagag caagaggaag acgatgagaa gtacatcttc agcgacgata gttcccagct    960
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<210> 468
<211> 1277
<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

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<211> 659
<212> DNA
<213> Homo sapiens

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ggccacggcc ctggacttaa gtctctctgc agggcctgga ggggcgctag gctgccctga 480
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<212> DNA
<213> Homo sapiens

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<211> 434
<212> DNA
<213> Homo sapiens

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aatcacttgc cctg 434

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<211> 829
<212> DNA
<213> Homo sapiens

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<211> 667
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<213> Homo sapiens

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ggaggtg 667

<210> 475
<211> 1519
<212> DNA
<213> Homo sapiens

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<211> 628
<212> DNA
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attcaagatg ttgggtccta aacttccc 628

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<211> 377
<212> DNA
<213> Homo sapiens

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<222> (1)...(377)
<223> n = a,t,c or g

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gacaggatgg ggtagatgga gggtgagagg atccagatgc tcaacacaga tgagcccatg 300
gcttccggcg ctgcccagag agctggagac acagagagac agagagggaa agatggagag 360
acaccaggaa ttgtatt 377

<210> 478
<211> 1247
<212> DNA
<213> Homo sapiens

<400> 478

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<211> 2070
<212> DNA
<213> Homo sapiens

<400> 479

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<212> DNA
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<211> 1048
<212> DNA
<213> Homo sapiens

<400> 481
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<212> DNA
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<400> 482

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<212> DNA
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<223> n = a,t,c or g

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<210> 484
<211> 3884
<212> DNA
<213> Homo sapiens

<400> 484

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<210> 485
<211> 478
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

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<210> 486
<211> 477
<212> DNA
<213> Homo sapiens

<400> 486
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<210> 487
<211> 4198
<212> DNA
<213> Homo sapiens

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<210> 488
<211> 861
<212> DNA
<213> Homo sapiens

<400> 488

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aatcgtccac tacatcatga aaaatgaagc gaatgctgat gtcttaaagg cgatggtagc    480
agataacagc ctgtatgatc ctgaaagccc cgtgaccccc agcacaccag gggagcccgc    540
cagtgagtcc tgggcctttg tcaccagggg ggacgccagg gaagcacgtc tgtggccatc    600
atctgcatac ggtgggcggt gttgtcgaga gggatgtgtg tcatcggtgt aggcacaagc    660
ggtggcactt tataaagccc actaacaagt ccagagagag cagaccacgg cgccaaggcg    720
aggtcacggt cctttctgtt ggcagattta gagttacaaa agtggagcac aagtcaaacc    780
acaaggaacg gagaagcctg atgtctgtta atggggctga aaccgtccat ggggaggtgc    840
cggcaacaac ttgtgagaga a                                              861
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<210> 489
<211> 848
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(848)
<223> n = a,t,c or g

<400> 489

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tcacactcca atgcctggtt tgtgcagaaa gcagcttctc aaagacaggc atctatcagc    180
acagcctgtc actgtcctgc agaggcagga ggtgagagga tcactgtgag caccactggg    240
gcccaaagaa atgcagcgat ggtgccagac ctgcagagcc cacggagaag ctgagcccag    300
agccagatct gtggcaccat cagcgtctgc agctgcactt ccttgtccca tttctgaagt    360
ggcctctgaa taaaatgtga tatactcatt tctgtgctgt aacagaatag aaaccaaaat    420
gcattaagca cctctctatg ctaggatgtg ataggcatta ttgggtcact gggtcactca    480
gcaatccttt atggtagata atgttgtccc tacattgtat acaagaaaca aaggtgtagg    540
cttggtgccg tggctcacgc ccataatccc agcactttgg gagggcaagg caggcaaaat    600
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aactgagggt aggaagtgga aaacaacctg ggcacatgga aaaaccccat cctactaaaa 660
tacaaaaatt aactgaaaac acttgaaccc cggagggggg gttgccngaa cccaaatatt 720
gccctgcatt ccaccctggg cttcaaaggg agattctttt taaaaaaaaa aaagggggcc 780
cgctttagaa gcaactcttc cccgggcggg ggatttaaat tttttaaggg accaaaataa 840
ccgagccc 848

<210> 490
<211> 1621
<212> DNA
<213> Homo sapiens

<400> 490
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tattcatcat ctcagagcat agagaccctc tccttgccac ccggcccttc ccacctggtt 180
ggtgacaaat cacaaggtgg tagaagttgc cagggacaga taacatcggc agccagcggg 240
aagaccagca agtccgaacc gaaccatgtt atcttcaaga agatctcccg ggacaaatcg 300
gtgacccatc tacctgggga acagagacta caatagacca tgtcaggcca agtccagcct 360
gtggatggtg tcgtgttggt tgatcctgat cttgtgaagg gaaagaaagt gtatgtcact 420
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acgtttcctg actacttgcc ctgttcagtg atgttgcagc cagctccaca agattcaggg 660
aagtcctgtg gggttgactt tgaggtcaaa gcattcgcca cagacagcac cgatgccgaa 720
gaggacaaaa tccccaagaa gagctccgtg cgattactga tccgcaaagt acagcatgcc 780
ccacttgaga tgggtcccca gccccgagct gaggcggcct ggcagttctt catgttttga 840
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cattccgtgg aacaggtggc caatgtggtt ctctactcgg agtgattatt tacgtcaagc 1020
ccgtggctat ggaggaagcg caagaaaaag tgccaccaaa cagcactttg accaagacgt 1080
tgacgctgct gcccttgctg gctaacaatc gagaaaggag aggcattgcc ctggatggga 1140
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ggaggggaag agagaccaag aatgacattg atgagtgaag atgtcggctc aggatgccgg 1500
aaaatgacct gtagttacca gtgcaacgag caaagcccca cagtttagtc ctttggagtt 1560
atgctgcgta tgaaaggatg agtcttcttc cgagaaataa agcttgtttg ttctcccctg 1620
g 1621

<210> 491
<211> 466
<212> DNA
<213> Homo sapiens

<400> 491
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gcaccctgcc ctggaaactc gtctatgcca atggccttgt gccataccca gctcagagcc 120
cgactgtggc cgagacactg catcctgcct tctccggagt ccagcagtac acagccatgt 180
gccccaccgc ggccatcacg cccatcgcgc acagcgtcct ccagccgccg cccctcttgc 240
agcagcagca gcgagaagga gtttggagac acggagctga cgcagatgtt cgtgcccttc 300
ggcaatatca tttcctccaa ggtgtttatg gatcgagcta ccatccagag caagtgtatc 360

ggcttcgtga gctttgataa cacggccagc gcccaggcag ccatccaggc catgaacggc 420
ttccagatcg gcatgaagag gctcaaagtc cagcacgaat ggcgaa 466

<210> 492
<211> 767
<212> DNA
<213> Homo sapiens

<400> 492
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tacagagtat caggtcctca agatgctaaa atctatatga catttttaac atgtgacatt 120
atcatcatca tcatcatcat catcatcatc actgatgata ctatttacca gggcatggtt 180
tgaattggtg actttggtgc agttcattat tggcagccaa atgctttatc catacottca 240
tattgaagaa tttgttatca ggaaactacc agtcctgctt tacaggaagt ctgttatcag 300
atatcagatg gcaagttccc catgtcttca gatgttcaaa caatattgtg gatggtctag 360
aaagagttta agacatgctg ttaaatgtag ggctagataa ttctctgatt ctttgatgta 420
gtctggaaag aaacaatcca ttgtccagtt aataaatatt tagtgttttc atttttaaga 480
cactcacaat ccacaaatgt ccctaacaat ttattatttt taaagaaaat gactttttat 540
tccttgctag tgaaaaatgt acaatttata tgctgcactg agaaaaataa cagatatact 600
ttcttccatt cattttcatc ccaaacatat aaaaaataat ccattgattg ttccttgcat 660
tgcatatctt attaaaagat atttcctaca tgcaactaat aagacatgct gactgttgtc 720
agctctaaat ttatgtaaag atttttattt tttgttaaaa tgtttga 767

<210> 493
<211> 852
<212> DNA
<213> Homo sapiens

<400> 493
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gtttttagga ttcttcatat gttccttgtt tttcagtgag ctttctacag ggaccacaca 120
ctccttagaa tcctatcaaa tactgttgtc aaaattcttt cgtcatcctc tctgcactag 180
aacttttaga attttaccac cattccactt ctagtaataa aaaatgggac aagtgtcagg 240
ccaacagcca tttattgagt atttaataat tactggttac ctatatttca tatcaaatcc 300
tcaaaagaac cctgttgagt aggtgttctc tttggcattt gacagtgtgg gaaatgaggg 360
ataaagatat taaaagtttt gctcaaggcc ctgtaataag atagttccag accaaatacc 420
acatgttctc acttataagt gggagctaaa tgatgagaac acatggacac aaatcaggga 480
acaacaggca caggggccta ccagagggta gagggtagga ggagggagag gagcaaaaaa 540
aataactatt gggtactaga tttagtacct gggtgatgaa ataatctgta catcacaccc 600
ccatgacaca agtttaccta cataacaaac atgcacgtgt acccctgaac ctaaaagttt 660
aaaaagaaaa aatgccaatg aaaacattat aaacttatga aaatccagaa gggtacccct 720
atattaggaa ttatgactgg gttccttata ttggaggggc tattttaagg ttatatattc 780
aggcccggcc ttgtggggcc tgccctgtaa tttcaggcct ttggggaggg ccacagggga 840
gaaacacctt gg 852

<210> 494
<211> 849
<212> DNA
<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(849)
<223> n = a,t,c or g

<400> 494
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gactcacatg gatatggacc attctccatt cctgaagttc agatgggctg gcccccatcc 180
ctctgggtct tagccctggc atactgctgc aaagctccgc aacgcctttg ctcaggaagc 240
tccccgtgca ggttctcatc aaggatgtct gcctcccctg ctacaaacag gaacgaaaac 300
actacttcct ggattgcgtc tttacataaa tatgtaattt cccagtaaca tcacttcctg 360
gagtccagct tctcatcggt ctcgggaacc tacagtttcc ctactcagtt ttgtccttgt 420
caccaacagg ttatttggaa gtcatcttgt ggctttagtc cctgattatt gcttcctctg 480
ttgtttcacc tctgatagcc tcttgatggg gccacgagaa tgaatcatta agactactgc 540
agccgggtgc ggtggctcac tcctgtgatc ccagcacttt gggaggctga ggcgggtgga 600
tcatttgagg tcaggagttt gagaccagcc tggccggcac ggtgaaaccc gtctctactt 660
agaatacgaa aattaaccgg gcggtggggt ggggcccttg ggatcccagc ttactcggga 720
ggctgaggga ggagaatctc ttggaccctt ggaggggga gggtccattt aaccaaaatt 780
gcccccattg acttccgccc tgggcaccag agccggaatt ccgggtcaaa aaaanaaaaa 840
aaaaaaaac 849

<210> 495
<211> 950
<212> DNA
<213> Homo sapiens

<400> 495
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attttataac taagaatttt tagttaagaa cattatcagt aaagacaacg taatcccacc 120
ctggagagtt tattgggagc ccaggaatat tcattttttaa tacacacaca cacacacaca 180
cacacacaca cacactgatc agagtaacag gagtttctct caggagtcat actccatgag 240
cctggaccca gtggttcttt atgtggaaac aaatttcacc tataggtaac ctggtaactg 300
ctattttctt ctgtgtgctc tgtcaacaaa ggtatcagtg gcttgcaaga gatgccttta 360
atactcagag cattctatct cccccctatct gggtttagaa ggaaggcctt cattagttac 420
cttttgagaa gttactagaa ctctctatta gagacttacc ctcctgacct gataaaaagg 480
gatacccatg tctctattaa cagctttatc tctttctaca gttttgggta tttgataagg 540
ttaaggcaaa attttagtta tgcttaagga ggagttcttt tttcacaatt acagagaaaa 600
ttttggtttg ttgaagattg cagaaacagc aatggtaatg taagacagtt ttggccttta 660
atttttttct tgaaactcta cagtatacta caatagtgaa ggaaactatt aacatgagag 720
atccttctga ataggatgtc tttctgagtt ccactattca gttacaaaac tccttaatgc 780
ttaaaattca ttatgaaaat tagatttatt ttaaatactt tcaagtgtat acatttttat 840
ttcataattt ttattgtctt ttaactaaag catttagttc atttatattt actgtgtacc 900
ttttatattt aataaatata tttacttatt aaaagataaa aaaaaaaaat 950

<210> 496
<211> 838
<212> DNA
<213> Homo sapiens

<400> 496
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gtgttttagg cctctgaggg cagctgtagg ttgctgaagt caaatatgaa aaaatctcaa 120

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gaaatgatcg tgtaatctaa acccttaaac cataagcctg taaccgttag catgccttga     180
gatgcacagg tgttcttgtc acttgatgca ggcaacaagt gttgcagcag ttgtgtggca     240
cgtggctagg aactgtcaga gatcgccaca tcactgatgg tggccgtatc cttgctgtgc     300
ccatggccgt catcctggaa taggaggtcc tgcggaagga gccacagaaa cctcggcctg     360
ttcactgcat ttctgagtgt ccctgagttt gtcattttg gtgcctgcag gtactggtag      420
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cctggttccg gaggaactgc atggcctccc gcattgctgt ggaccttgac aaaataacac     540
cattgccgcg actgtttctt gatgaggtat agcgagatat ttatgaaaca atttttgaa      600
gcaaaaacat tgcttagcta taatgtaaca ggatgtttaa tttgttggac cacgattaaa     660
ttagcttgcc atggaatatt caagaactat cacatacgtg tggaatacag cgcggatccc     720
gccttaataa ctaactttgg tgggcccggg gggggatcat aagaaaggct ttaaaacctt     780
tggccaacat gagaatcccc tctctagaga atagagagtt acctccgacg cgccgcgc       838
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<210> 497
<211> 598
<212> DNA
<213> Homo sapiens

<400> 497

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gagcagcgcc gcggagagcc agctgctccc cgggaacaac ttcaccaatg agtgcaacat     120
accaggcaac ttcgtgtgca gcaatggacg gtgcatcccg ggcgcctggc agtgtgacgg     180
gctgcctgac tgcttcgaca agagtgatga gaaggagtgc cccaaggcta agtcgaaatg     240
tggcccgacc ttcttcccct gtgccagcgg catccattgc atcattggtc gcttccggtg     300
caatgggttt gaggactgtc ccgatggcag cgatgaagag aactgcacag caaaccctct     360
gctttgctcc accgcccgct accactgcaa gaacggcctc tgtattgaca agagcttcat     420
ctgcgatgga cagaataact gtcaagacaa cagtgatgag gaaagctgtg aaagttctca     480
agtcttcagg ccccaggtca gtgagtggca agccaggccc agagatctct gcgcccgttg     540
gaacatcccc tttctcggga ggcttgaaag gccatggtca ttcacctctt cccagcag       598
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<210> 498
<211> 1902
<212> DNA
<213> Homo sapiens

<400> 498

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ccacacacac cacacacaaa gagtgcaatt gagagccttg ggccaggacg ctagaagata      60
gggatgtagt tgtcgatttt ggcgcggtgg cgctgggcga tacattcagc gatccacacg     120
atgttgcgac actcctgctc cttgagcttc acgaaggcat agaagacacc aaagtggaac     180
tggttcagga aggccaactt gttcagcttt acctcgtgct caaagaatcg gtcctccagc     240
gtcttgtctg caccaggttg aggtagtcgg cctggctgag caccccggcc ttcaggccgc     300
gcaccagtcc ctccaagtag ccattgtcca cgttaaagta aagctccggg aagaacgaca     360
tggctgctgc gggagcggcg ggactggtgc gcggcctgaa ggccggggtg ctcagccagg     420
ccgactacct caacctggtg cagtgcgaga cgctagagga cttgaaactg catctgcaga     480
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agccactcgc cagcttccta gacttcatta cttacagtta catgatcgac aacgtgatcc     660
tgctcatcac aggcacgctg caccagcgct ccatcgctga gctcgtgccc aagtgccacc     720
cactaggcag cttcgagcag atggaggccg tgaacattgc tcagacacct gctgagctct     780
acaatgccat tctggtggac acgcctcttg cggctttttt ccaggactgc atttcagagc     840
aggaccttga cgagatgaac atcgagatca tccgcaacac cctctacaag gcctacctgg     900
agtccttcta caagttctgc accctactgg gcgggactac ggctgatgcc atgtgcccca     960
tcctggagtt tgaagcagac cgccgcgcct tcatcatcac catcaattct ttcggcacag    1020
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agctgtccaa agaggaccgt gccaagctct ttccacactg tgggcggctc taccctgagg   1080
gcctggcgca gctggctcgg gctgacgact atgaacaggt caagaacgtg gccgattact   1140
acccggagta caagctgctc ttcgagggtg caggtagcaa ccctggagac aagacgctgg   1200
aggaccgatt ctttgagcac gaggtaaagc tgaacaagtt ggccttcctg aaccagttcc   1260
actttggtgt cttctatgcc ttcgtgaagc tcaaggagca ggagtgtcgc aacatcgtgt   1320
ggatcgctga atgtatcgcc cagcgccacc gcgccaaaat cgacaactac atccctatct   1380
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cggggtgtag tacgctgtcc tagcggctgc ccagttctcc tgaccctctt agagactgtt   1560
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cactttcatg ttcctcccta actccctgac ctgagaaccc tggggcctgg gggcagtttg   1740
agcctcctct ccccttctgtg ggtcgctccc agagccatgg cccatgggaa ggacagagtg   1800
tgtgtgtcct tggggcctgg ggggatgttg ctcctcagct ccctccctca gccctgcccc   1860
tctgagacaa taaaactgcc ctctctaagg ccaaaaaaaa aa                      1902
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<210> 499
<211> 2122
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2122)
<223> n = a,t,c or g


<400> 499
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accatgctca gataattttt taactttttg tagagaaagg gtctcactat gttccccagg    180
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caccactgtg cctggcctaa aaattttttg ttaaaaatgc tttccaccgg ccgggtgcag    300
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caattaaaat tgtcttgaaa gtatttattg tttaataatt ctttctcccc tcagccccat    420
ccggccactc tctctttctg cttttctgat catcctaaag gctgaataca tcctcctcat    480
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acaaggtagt cctttctcaa ggtcgctggg gccactcatg gagttgaaat gccgctgccc    660
atctaagtac aacatggact ctccatatgt ttttgggaaa accagtggca cttctttttc    720
cgacatgaac gtgaaatgaa agacattggt ggttgtatgc tgcttctcct gcagggaggc    780
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cttgttcaat tccccttgtc taaagagctc ctcttcctct gggctttcag ggatgagtgg   1260
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cttcttacac atatcaatct tatccaccag ggctgtaact atcgataaag gagacatctt   1500
ggcggagtgg attttgttgt gcatgtaaca aataagaact cccaagctgt caagatcctc   1560
aagaatcctg ccaaatctta cggtgttttg aacagtcaaa tatttctctt gtaattcagg   1620
ctcactgccc aaaggcaaga gaacttcaat ataactgtcc ttcattctcc taggaggcag   1680
tccatcctgt gatttagcca agaaactatg aagtaatttc ctttcttcca ttgccttcac   1740
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atggtctctc cagtttgtgg atgctcctac tatctcccgc aacttatctc gaacttcatg 1800
aatgtggaag attccctgtt tcttggggtt ctggggtcct tgagtcagtc ctcttccagg 1860
agtaagctgc cctttgccca aggcacaaag ccgcagtgct gcccgcctca ttgcgctagg 1920
ctgccgtgcg cgcgatggag aaccgggccc cgcgcgctag tcggcggagg gaaactgagg 1980
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tctatggggg ggggggggg cg 2122

<210> 500
<211> 458
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(458)
<223> n = a,t,c or g

<400> 500
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tgacctgcgt cggccactgc agcaatggcg gctcctgtac catgaacagc aaaatgatgc 180
ctgagtgcca gtgcccaccc cacatgacag ggtcccggtg tgaggagcac gtcttcagcc 240
agcagcagcc aggacatata gcctccatcc taatccctct gctgttgctg ctgctgctgg 300
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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<212> DNA
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<213> Homo sapiens

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<210> 539
<211> 384
<212> DNA
<213> Homo sapiens

<400> 539
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<211> 732
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

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ggaaaatctg ggaggaaaat tttttttttt ttccggggag gttgcggtta tccgggagca 600
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<211> 1634
<212> DNA
<213> Homo sapiens

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agtcattaac atca 1634

<210> 542
<211> 842
<212> DNA
<213> Homo sapiens

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gg 842

<210> 543
<211> 1100
<212> DNA
<213> Homo sapiens

<400> 543
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<211> 939
<212> DNA
<213> Homo sapiens

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ggtgtccaga gaggtgctcg gggcctatgt gcacgcacta cacacagata gtttgggcca 720
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tttgggagaa cgcggtctac tttgtctgca attattctcc aaaggggaac tggattggag 840
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<210> 545
<211> 1053
<212> DNA
<213> Homo sapiens

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gaatctctct cgaaaagctt cctttggaaa ttt 1053

<210> 546
<211> 715
<212> DNA
<213> Homo sapiens

<400> 546
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agtggcttaa aaagttttca tgaattaaaa gctaattaaa atctataatg aacaatatcc 480
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<210> 547
<211> 812
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(812)
<223> n = a,t,c or g

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ggaagcntag ggattttcag gccccgggtt aa 812

<210> 548
<211> 578
<212> DNA
<213> Homo sapiens

<400> 548
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<210> 549
<211> 428

<212> DNA
<213> Homo sapiens

<400> 549
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ctctttgc 428

<210> 550
<211> 849
<212> DNA
<213> Homo sapiens

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aaaaaaaaa 849

<210> 551
<211> 648
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(648)
<223> n = a,t,c or g

<400> 551
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aacggcccag gggacgccct cggcctcgag gcgggggggg ccccggaccg cccccccacg 420
gcgaccaccg gcaagcccac cggagcaacg gccccccccc ccccggagcc accaccctac 480
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cgaatgcccg gcggccgcat gaccccccgcc ccagaggctg ctcgttcttt tgaacaaggc 600
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<210> 552
<211> 713
<212> DNA
<213> Homo sapiens

<400> 552
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<210> 553
<211> 714
<212> DNA
<213> Homo sapiens

<400> 553
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aatttctact ctttccgagg ggctaatgct gttctcagct gtgaaacttt attgttgtca 180
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attgtaggcc atgttaaggt tttgaacgtt atttttagag cagttgctaa tgaagtatat 660
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<212> DNA
<213> Homo sapiens

<400> 554

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<212> DNA
<213> Homo sapiens

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<211> 1372
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<212> DNA
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<211> 424
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

<400> 572

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<210> 573
<211> 4692
<212> DNA
<213> Homo sapiens

<400> 573

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<210> 574
<211> 4486
<212> DNA
<213> Homo sapiens

<400> 574

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<210> 579
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<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 579

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<210> 580

<211> 2168
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<210> 581
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<212> DNA
<213> Homo sapiens

<400> 581
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tgtctattca tgcccttgac ctttttttaaa aaataaagag actgtagata aaggacatta    180
aacttttgcc aagtatgttt caaatatatt tttcatttttg tcaattatgt ttcatttggt    240
cgtgcttttt taacagtaga gaaactttta atgaaatcta taaatttttc ctaaaaagtg    300
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aaaaatgct 1089

<210> 582
<211> 443
<212> DNA
<213> Homo sapiens

<400> 582
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ctccttaccc tcagtgaaca atg 443

<210> 583
<211> 2590
<212> DNA
<213> Homo sapiens

<400> 583
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<210> 584
<211> 425
<212> DNA
<213> Homo sapiens

<400> 584

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aaaga                                                                425
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<210> 585
<211> 841
<212> DNA
<213> Homo sapiens

<400> 585

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gaaataccat ttaaggcaat aagggaccta tttatttctc taatgaggca actggacttc   180
agaaaatgta agtgacttga caagttgcat tcccttagtc attcagctgc cttcctggaa   240
cacataagca aacaatcctc aatgtaatgt cagagattgg taagtgcttt gagaaaacac   300
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<210> 586
<211> 787
<212> DNA
<213> Homo sapiens

<400> 586
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<210> 587
<211> 363
<212> DNA
<213> Homo sapiens

<400> 587
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<211> 814
<212> DNA
<213> Homo sapiens

<400> 588
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<210> 589
<211> 794
<212> DNA
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ccttgataaa tgag 794

<210> 590
<211> 1012
<212> DNA
<213> Homo sapiens

<400> 590
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<212> DNA
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<211> 825
<212> DNA
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<210> 593
<211> 867
<212> DNA
<213> Homo sapiens

<400> 593
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<210> 594
<211> 654
<212> DNA
<213> Homo sapiens

<400> 594
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tcttctattc caccatctcg ctgatgtcag tcctcaaata ataattttat attttagcaa   180
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gtcagcatat agggacagaa tataactaca cattaataat ttctcaagta tttattttag   420
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<210> 595
<211> 611
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 595

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<210> 596
<211> 644
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(644)
<223> n = a,t,c or g

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<210> 597
<211> 3834
<212> DNA
<213> Homo sapiens

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<211> 1024
<212> DNA
<213> Homo sapiens

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<210> 599
<211> 444
<212> DNA
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<400> 599
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<210> 600
<211> 380
<212> DNA
<213> Homo sapiens

<400> 600
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<210> 601
<211> 667
<212> DNA
<213> Homo sapiens

<400> 601
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caatcct 667

<210> 602
<211> 615
<212> DNA
<213> Homo sapiens

<400> 602
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<210> 603
<211> 15731
<212> DNA
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<400> 604

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<210> 606
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<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(1433)
<223> n = a,t,c or g

<400> 606

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<210> 607
<211> 363
<212> DNA
<213> Homo sapiens

<400> 607

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gacctctctg atatgaagaa taatgagcct tatgactata agtttgtgaa atggatgact     180
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tct                                                                   363
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<212> DNA
<213> Homo sapiens

<400> 608

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<210> 609
<211> 592
<212> DNA
<213> Homo sapiens

<400> 609
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<211> 408
<212> DNA
<213> Homo sapiens

<400> 610
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<210> 611
<211> 594
<212> DNA
<213> Homo sapiens

<400> 611
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<210> 612
<211> 339
<212> DNA
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<220>
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<223> n = a,t,c or g

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<210> 613
<211> 324
<212> DNA
<213> Homo sapiens

<400> 613
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<210> 614
<211> 3629
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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

<400> 615

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<211> 1927
<212> DNA
<213> Homo sapiens

<400> 616

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<212> DNA
<213> Homo sapiens

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<211> 946
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

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<211> 354
<212> DNA
<213> Homo sapiens

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<210> 620
<211> 384
<212> DNA
<213> Homo sapiens

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<211> 873
<212> DNA
<213> Homo sapiens

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<211> 875
<212> DNA
<213> Homo sapiens

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<211> 923
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(923)
<223> n = a,t,c or g

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<211> 1101
<212> DNA
<213> Homo sapiens

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aaggagcgta gaggcacagc g 1101

<210> 625
<211> 1077
<212> DNA
<213> Homo sapiens

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<210> 626
<211> 1085
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

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<210> 627
<211> 838
<212> DNA
<213> Homo sapiens

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aaccctaatt ggcatctaac ttttcacacg agtgtgtttt cttttcccaa aggggttaga 180
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catgccctgg ctggtctggc catgtctgga gcacctgtgt ggttatgaga accttggcaa 360
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tactggggag ggaccaaatg ggatttggga ctaatctgtc acatggggag tgtaggcatc 480
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cgcctccacc ccctagccac ctttccccgc ctgcggtgcc caacaatcct tctcccccct 780
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<210> 628
<211> 845
<212> DNA
<213> Homo sapiens

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cctgggtgac cgagctagac tttctagaga ggggcctgga aggaaccaac cccaactttt 720
tctttcccca agaaaccccc ccgcctttta tagaccagac ccttcggccc tctgtcctca 780
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<210> 629
<211> 913
<212> DNA
<213> Homo sapiens

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atacgattac taactatagt gataggcgtt tatacatttc ccctttgagc catttcttta 180
tgaacagtgg ttcttctgct caaagtgttc tgtctcattc ttatgtttct caaatcttct 240
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aagccaaacc tacaaggcct acgtcctgtg tggctcaacg gtacaaatgg ctgaacttat 540
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ccctcactaa tcgcgcacta aagcagaccc tgaccacctc ctcgccgctt cctgaccgcc 660
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cactctccgc ctcaacttcc cccaccccga cccagcccac tccgccctcg ccccacccgc 780
cgcctccctc tctcgtgacc cctcgcccta ccctctcgcg gtcgactcct cgctcgctcg 840
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<210> 630
<211> 812
<212> DNA
<213> Homo sapiens

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ggctgcgatt gtgaaacaaa taaattgaaa cttaagggcc tgttctctcc aaatttagtt 180
ccattatcac tttaagaatg cacgctactc aatgatacaa aagggatgta tgtagctggt 240
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ttacaaggtt gttttctcat tggaagtctc catttgtgta tttgtgtacc tatgtgcgtg 360
tgtgtgtgtg aatatcggat attacatgac agcaagatat cttttaaata tttaagattt 420
acaattttaa agagagaaaa caagaataaa gttttgcaga agcttaaaaa aaatttaaaa 480
tcagttcaca ctttgagcta aaatggggat agtagcgata tttcaaatat attaattata 540
tgcctctctc atgactatga gattcttgga tggattgaca agcccctccc ttaaaggata 600
ttatgggctt cacgctacag ttgagagatc gtgagggatt taggagactt tagacgggcg 660
tttgggggct tttttacac gaaggaatat tttggattta agagaggaga ctattggacc 720
ccacgtgaag agacactttt agtgtggggg tgtagtacgg gaacacggag tattatatca 780
tcgcctctac cacgaggaca cctacctcgc gg 812

<210> 631
<211> 760
<212> DNA
<213> Homo sapiens

<400> 631
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ctacaaggga cattttagtg taaggcaaaa atataaaatt atcactcata atgtttttc 180
ggaaaatata tgactgcatg gttttgtagt tttcttagca gtcactgggt cattaagtta 240
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aactgtccaa ttttatgtgc attgaaagca aaagctagct gagaaaggaa agcttttctc 480
atcaaatagg ttgaaattac tgtcgtaaaa cagtgataaa taccagataa gatatgtgat 540
ccttgaagtt taataaatat ttttggactg ttaatttata ttcacttttg ggcatgtttt 600
ttttgagaca tggtctctat agcccaggat ggagtgcagt catgtaatca tggctcattg 660
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tacaggcatg tgccaccatg cctagctaat aaaaaaaaaa 760

<210> 632
<211> 1716
<212> DNA
<213> Homo sapiens

<400> 632
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ggtggacctt ggattttggc gggtgaagag gctaggttgt ttaaggaggt ggggcgcgtt 180
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gaaccagcgc atcgtccagc tcatccagga cacgcgcatt cacatcctgc catccatgaa 600

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gaggcagctg cagagaggcc ctgcctgaaa cccacagtgc caggcacccc ctcagaaagg   1620
ctttgctcct gctctcagat cagatcaagc attctttgta ttttattatc tgggacatat   1680
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<210> 633
<211> 924
<212> DNA
<213> Homo sapiens

<400> 633
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gttaacggaa ctcctgagag gtggatcctt tgagtttaag gacatgcgtg ttccttcagc    180
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accaatggac tctggctcaa ctaactggct aacctgagaa caataagatt ttttagactc    840
attgaattca agcaaatgtt taactgtata atagaaaatt aaatgtttta agcttacggt    900
acaaatgttc ttttcataaa aaaa                                           924
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<210> 634
<211> 455
<212> DNA
<213> Homo sapiens

<400> 634
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tcctcagcat atgctcaggc actgtgctgt ccactggcac aacaatgtga acttggggga    180
gacaaattat aataaattat taaaagagct ataatggata taaagtgtgt gttctgacag    240
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aaaatgggga gaaggtggct atttttgata gcgtgtttaa gatcagcctc tatactggcc     300
tgggcaacgt ggcgaaaccc cgtgtctaca aaaaataaaa aattagccag ccatgatggc     360
ccacaccttg cagtcccagc tattcgggag gctgaggcgg ggagatggct taagcccagg     420
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      <210> 635
      <211> 384
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(384)
      <223> n = a,t,c or g


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atgaatgtgt gggtgctctt catcccaaca aggctgcgta tcgaccaaca acccgtgcac     180
attaaaccga gcatgagggt cctagacaag tgggtcagtg cctttgtgca caaaggtttc     240
acgtggggca catcggagag aataaatacc ggttcttcct cggacatcac tttggggatt     300
cttaacaaat gcggctgggc cgtattctgc gcagcaccgt gatggttacc gttggtggca     360
gacggatggc cttgggacga tttn                                            384


      <210> 636
      <211> 1201
      <212> DNA
      <213> Homo sapiens


      <400> 636
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tcatcttcca agttttgtgc tcccctttac ctaacgcttc ctgcctccca tgcatctgta    1140
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<210> 637
<211> 981
<212> DNA
<213> Homo sapiens

<400> 637
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gctcggcgtt ccttgtctgc ctcgctttct ccttggccac cctggtccag cgaggatctg 180
gggactttga tgattttaac ctggaggatg cagtgaaaga aacttcctca gtaaagcagc 240
catgggacca caccaccacc accacaacca ataggccagg aaccaccaga gctccggcaa 300
aacctccagg tagtggattg gacttggctg atgctttgga tgatcaagat gatggccgca 360
ggaaaccggg tataggagga agagagagat ggaaccatgt aaccaccacg accaagaggc 420
cagtaaccac cagagctcca gcaaatactt taggaaatga ttttgacttg gctgatgccc 480
tggatgatcg aaatgatcga gatgatggcc gcaggaaacc aattgctgga ggaggaggtt 540
tttcagacaa ggatcttgaa gacatagtag gggtggaga atacaaacct gacaagggta 600
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<210> 638
<211> 1421
<212> DNA
<213> Homo sapiens

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<210> 639
<211> 755
<212> DNA
<213> Homo sapiens

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<210> 640
<211> 1776
<212> DNA
<213> Homo sapiens

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<210> 641
<211> 418
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 641

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<210> 642
<211> 731
<212> DNA
<213> Homo sapiens

<400> 642

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gctttggcta ttcaaagttt attgtagttt catgtatgtt ttagggttgt gtttttcatt    600
actgtgaaaa aagaacactg gaattttgac agggagttta ttgaatctag agatcacttt    660
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<210> 643
<211> 956
<212> DNA
<213> Homo sapiens

<400> 643

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<212> DNA
<213> Homo sapiens

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<210> 645
<211> 904
<212> DNA
<213> Homo sapiens

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<210> 646
<211> 943
<212> DNA
<213> Homo sapiens

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<210> 647
<211> 782
<212> DNA
<213> Homo sapiens

<400> 647
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<210> 648
<211> 689
<212> DNA
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<210> 649
<211> 886
<212> DNA
<213> Homo sapiens

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<210> 650
<211> 1624
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(1624)
<223> n = a,t,c or g

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<212> DNA
<213> Homo sapiens

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<210> 652
<211> 743
<212> DNA
<213> Homo sapiens

<400> 652
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aaagcccaga gttcaccact atg 743

<210> 653
<211> 1524
<212> DNA
<213> Homo sapiens

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<210> 654
<211> 711
<212> DNA
<213> Homo sapiens

<400> 654
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<210> 655
<211> 1524
<212> DNA
<213> Homo sapiens

<400> 655
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<211> 993
<212> DNA
<213> Homo sapiens

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cgtgatcgtc ctccaatacg tgtgccccgg cacagaatgc cagctcctcc gcctgcaggc 180
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<210> 657
<211> 969
<212> DNA
<213> Homo sapiens

<400> 657
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taaatttacc attttgctat ttgttttcta tatttctcct gtcttttttg atgttgttat 180
tttctgcatc cttaactggc ttcctttgtg ttaaataaat attttccaat gtagattttt 240
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aaaaaaaaa 969

<210> 658
<211> 572
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(572)
<223> n = a,t,c or g

<400> 658
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gatgacctgc ctgcagagat gagccaccca ctctagggcc tcctgtctgc tgagagctgc 120
acagacaaca ggacaatcag gtacagagag gagctacact ctctgttgat agctgaacac 180
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gcctcacaat catggcggaa cgnaacgagc ag 572

<210> 659
<211> 844
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(844)
<223> n = a,t,c or g

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gggg 844

<210> 660
<211> 772
<212> DNA
<213> Homo sapiens

<400> 660
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gtgctaaaca tgaggccatg actttagaac acagggtgtg gctggagcac at 772

<210> 661
<211> 920
<212> DNA
<213> Homo sapiens

<400> 661
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<210> 662
<211> 1372
<212> DNA
<213> Homo sapiens

<400> 662
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<210> 663
<211> 1192
<212> DNA
<213> Homo sapiens

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<210> 664
<211> 779
<212> DNA
<213> Homo sapiens

<400> 664
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gccatctttg gatttccact ctttggtttc ttattggctg gaattgaaga ccaacttgga 480
accatctttg ggaaaagcat tgcaagagtg gagaaggtct tttgaaaaaa gcaagtgagt 540
cagaccaaga ttcgggtcat ctcaaccatc ctgttcatct tggccggctg cattgtgttt 600
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tactttgtgg tggtcactcc gcccacggtg ggctttggtg attttgtggc agggaaaacc 720
gctggcatca attatcgaga ggtgtattcg cccgctgtgg ggtctcccta attccagac 779

<210> 665
<211> 418
<212> DNA
<213> Homo sapiens

<400> 665
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gtaagcaata tgtcctactg tccatcctgc tttgtctcct ggcatctggt tcggtggatt 180
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gccctgatgt aggccaccct gaaaatcacg aactccaact tctacacggt ggcagtga 418

<210> 666
<211> 722
<212> DNA
<213> Homo sapiens

<400> 666
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tgtccacata tacgcgtgca gcacagcacc actagcccag tacatccaca aacaatcgtg 180
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ag 722

<210> 667
<211> 780
<212> DNA
<213> Homo sapiens

<400> 667
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<210> 668
<211> 781
<212> DNA
<213> Homo sapiens

<400> 668
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agatcaataa gaaattacag gccattacaa tggtaaggaa gaaaattgtt cattttactg 480
gctctgatca gagaaaacaa gccaatgctg ccttccttgc tggatgctac acggttatat 540
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<210> 669
<211> 869
<212> DNA
<213> Homo sapiens

<400> 669
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<210> 670
<211> 394
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(394)
<223> n = a,t,c or g

<400> 670
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ggcaaaagta tccagtggct ctaaggattg ccan 394

<210> 671
<211> 1121
<212> DNA
<213> Homo sapiens

<400> 671
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caaaaataat aataacaaaa tattagcttt attgatgaat acctcataca ccataaaagc 180
tagtgtttat agtatagtca cagagctgca cagccatcac cacaatgtaa ttttagaata 240
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<210> 672
<211> 1245
<212> DNA
<213> Homo sapiens

<400> 672
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tgaggtcgtg caactgcttc gacccgtctc atattctcgt ccatatacac tgctgctgga 180
cacagctaat cggcattatc actatctcta cttctatcat aacaacggtt accgccgtgt 240
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ctcccatctg cgtctcgcca cggtgttccc acacacttcg agtgaagaac aggagtgtga 360
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agaggaagtg tcagatatgg gtggtgacaa tcctgaagtg ggcaagaaag ctagaaactc 480
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agaaaagtcc ataatagacg agaaattctt ccaactctct gaaatggagg cttatttaga 660
aaacagagaa aaagaagagg aacgaaaaga tgataatgat gatgagtcag ttaaaagttc 720
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<210> 673
<211> 714
<212> DNA
<213> Homo sapiens

<400> 673
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tattttcact tagaattttg ctcagttttc ttctattctt gagagtttct gttgaagtgc 420
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tattattttt atttagttag tttttgagat agggtctcgc cctgtcacct agacaggagt 600
gcggtgacac aattatagct cagtgcaacc tcaaattcct gggctcaagc tatcctccca 660
cctcagtcta tgagtagctg ggaccacaga cacgcaccac caggcctggc tact 714

<210> 674
<211> 1138
<212> DNA
<213> Homo sapiens

<400> 674
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aaagttatat gagtcttggt tctataaacc attttctgtt ttttatacaa ctacttgtct 180
taaaaaatag ctattgtatg ttattaaaaa tgaaacagaa taaaaaactc aagaaaatta 240
tgtgtttatt attcttaatg ctatcaagtt atcatttaat atgaggtata ttttttattt 300
tgcttactta tattcagtca gaattaatga tggaatcttc ccccaccacc tccctacccc 360
aatactccag taacttatta atttattaca aagaatgacc aaaatgactt aaataagtag 420
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<210> 675
<211> 897
<212> DNA
<213> Homo sapiens

<400> 675
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<210> 676
<211> 609
<212> DNA
<213> Homo sapiens

<400> 676
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taaaatggt 609

<210> 677
<211> 999

<212> DNA
<213> Homo sapiens

<400> 677
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<210> 678
<211> 603
<212> DNA
<213> Homo sapiens

<400> 678
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ggatttcacc atgttggcca ggctagtctc gaactcatga cctcaagtga tccgcccact 240
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aac 603

<210> 679
<211> 374
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(374)
<223> n = a,t,c or g

<400> 679
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tgccgctcgt gccg                                                       374
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<211> 715
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(715)
<223> n = a,t,c or g

<400> 680
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aaagatcgag aagcagctgc agaaggacaa gcaggtctac cgggccacgc accgcctgct     180
gctgctgggt gctggagaat ctggtaaaag caccattgtg aagcagatga ggatcctgca     240
tgttaatggg tttaatggag agggcggcga agaggacccg caggctgcaa ggagcaacag     300
cgatggtgag aaggcaacca aagtgcagga catcaaaaac aacctgaaag aggcgattga     360
aaccattgtg gccgccatga gcaacctggt gcccccgtg gagctggcca accccgagaa      420
ccagttcaga gtggactaca ttctgagtgt gatgaacgtg cctgactttg acttccctcc     480
cgaattctat gagcatgcca aggctctgtg ggaggatgaa ggagtgcgtg cctgcttacg     540
gaacgcttcc aacgagtacc agctgattga ctgtgcccag tacttcctgg acaagattcg     600
acgtgatcaa gcaggctgaa ctattgccaa cgntcaggac ctgcttcgct gccgtgtcct     660
gacttctgga atcttgagac cagttccagt tgacaagtca ncttcacatg tttga          715
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<210> 681
<211> 757
<212> DNA
<213> Homo sapiens

<400> 681
gcgaaggaga cagcagagag gaagctcacc atggttgtcg ctctccatcc catcacgcta      60
gaatcatgtg tccaagggct caccctggag gtgcacagca caggtcagcc tggccagggg     120
cgaaggagac agtagagagg aagctcaggg ccttagggga ggccgggtgc aaacccgttc     180
tgcaccaagt gcactcggag tttgtgggta tgggtgtgta cccctgcagg tgtgcacatg     240
tgtgcttgca cgcacatatt tgtgcactcc tgtgcgtata catgtgtgct tgtgtatgca     300
tatgtgtgca ttcctgcatg tgtggacatg tgcgtgcatg catctgtgtg tctgtgtgtg     360
tgctgagaca ggaaaggggg tgaaagtgtt ggtgagggag cctggaagtt ttctcttccc     420
caacctctct tgctctaagg agggatgggg ttgggggcag ccattattga aggtgatcgg     480
agaagaaaga ttttctgact cagaagtgac tgccagtgta gcacaagcag tgtcccttgt     540
gactgtgatt ctacagttct ctgatcctca tgtttccttt agaggaaaga ggaaaaaagg     600
aactctgtgg tgggtattgg gagggaaaag aaaatagcct ggtggaggca ggagggagtc     660
gagtgtgagt aaggagcacc tgcagctttt ggaagtgaaa gcagagagag ggaaaggtag     720
ctaagacatc caggaggatc aaggggcagc gtgagag                              757
```

<210> 682
<211> 1660
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1660)
<223> n = a,t,c or g

<400> 682
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tttttttgg tagagacagg gtcttgctat gttgcccagg ctagtctcaa actcctgggc    120
tcaagcagtt cttgcctcag cctcccaaat tgctgggatt acaggcatga gccaccatga    180
ctggcctaaa acaaaataaa ttcttaatgg catttgtgga atgtgtttaa gagccaaaac    240
tgtgaaaatg taagctttat ctttcttttt tcctagatta tttaaagagg attgtagcca    300
caattcagat gaatgtttac aagccaaata atgatttaag agtgtgctca ataaaaaggc    360
cataggttta agaattaaat ggaataatat aaattactag gtcaacaaga atatttcatg    420
tatagtacac tgtctaagga atgcagagaa attttacaag aaacccaaga ctaaatactt    480
cattaagaac actggttact aagtaaatag atggctcatg taggaaaaag ctaatatatg    540
tagatgtaat gtcaactaag tgcatgtgac agaaatgaag aactaggaat aagaatccag    600
atttctggc caggcatttt taagtgctat tggtattcac tttatttcaa actgagcaaa    660
acaatacaac cttttacttt tttatacatt ttaaaatttc tctcatatta acattccttc    720
ctaccccaat ccatcccatc accaaacagg aatgagataa ggagtgaaaa aaagatgtat    780
gtttctcatt ttccttcttt tcccttgaag taaaccagta atttattaaa atattttata    840
ggtcagagga taacaaaaga ctcaatgtag taaataagta aataggcatt caaatatcag    900
taacctaaca ggccctaata cagctttaag attttcttct tttttttttt ttgagaggga    960
gtctcgctct attgcttagg ctggaatgca gtggtgcgat cttggttcac tgcaacctcc   1020
acctcccact attattgtgc ataaaaacac attaaatgac tctaaaacaa aataaacttt   1080
ttttttttg gtagagacag ggncttgcta tgttgcccag gctggtctca aactcctgac   1140
ctcaggtgat ccacccgcta tggcctccca aagcgctggg attacagatg tgagccaccg   1200
tgcctggcca gaaaatctgg attcttattc ctagttcttc atttctgtca catgcactta   1260
gttgacatta catctacata tattagcttt ttcctacatg agccatctat ttacttagta   1320
accagggttc ttaatgaagt atttactctt gggtttcttg taatatttca tgtatagtac   1380
actgtctaag gaatgcagag aaatattctt gttgacctag taatttatat tattccattt   1440
aattcttaaa cctatggcct ttttattgag cacactctta aatcattatt tggcttgtaa   1500
acattcatct gaattgtggc tacaatcctc tttaaataat ctaggaaaaa agaaagataa   1560
agcttacatt ttcacagttt tggctcttaa acacattcca caaatgccat taagaattta   1620
ttttgtttta ggccagtcat ggtggctcat gcctgtatct                         1660
```

<210> 683
<211> 471
<212> DNA
<213> Homo sapiens

<400> 683
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tgtctattgt cccctctttg tgtccatgaa tacccaatgt tgagcttcca ccgtcgcatc     60
agaccatgcg gggtttgctt ttctctgtct gcgttaattc gctgaggatg atggcccgca    120
gctgcatccg ttgctgcaga ggatgtgatt ttgcgctttt ctatgcttgg gcccactgtc    180
tttaacatca agtttgtgtt tcttatcaca gctctgggtg ctttacccag cagcctcccc    240
catgcccact ccgcagcctg gacgctgctg ccggggcctc cagcccagca gcacagcact    300
cgcctgtgga ccttttcaaa tatggctggt gtggagctgt gcccagggcc ccagccagcg    360
ggtcctgctg cccctgttgg gaggacgccg cctgtcctct ctgctttcac aacaacctct    420
tccttcgggt ctggctgtgg cgtcacctcc tccagggagc tgccccggcg c            471
```

<210> 684
<211> 478
<212> DNA
<213> Homo sapiens

<400> 684
ctgaagcggg agatcattct gtgaaatttg ggctcctttt tacctttgaa aaaattcact 60
ctaggccccc agttccatct tccttttctt ttgggtgtag cagcgttgat tttctgcagg 120
tattttgaac atcagcagct gaggcaactg aacatgtttc tgtgctgtct tgcacccact 180
tctctttgga agcttcctat gtattactgc acacctttc catgcctcct ctgtcctccg 240
cttcaacctt ccagagatgc tccagggtat cagtgggtcc catggaagac tgtctgaacc 300
aagacaagat aagatggaaa gcctcccgaa agacatgggt aggttcttag atgaacaatg 360
ggtttatttt attattttat tattattatt ttttttcga gacagtctcg ctctgtcgcc 420
caggctggag tgcagcggcg ctatatcagt tcacagcaag ctccgcctcc cgggctca 478

<210> 685
<211> 356
<212> DNA
<213> Homo sapiens

<400> 685
taagatgatc tttgcctgtg aatgtgtact ccgcttgctt ctgattctca atgtttcttt 60
cttaggtgca gtctccgaag agactactaa tgccttggaa acctggggtg ccttgcgtca 120
ggacatcaac ttggacattc ctagttttct attgagagaa catattgacg agctcatatg 180
tgataaaact ttagactcta aaaagattgc acacttcaga gctgagaaag agactttcag 240
cgaaaaagat acatattgct atttaaaaat ggaactctga aaattaagca tctgaagacc 300
gatgatcagg atatctacaa ggtatcaata tatgatacac aaggaaaaaa tgtgtt 356

<210> 686
<211> 923
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(923)
<223> n = a,t,c or g

<400> 686
tctttattct gtctaccact gcactccagc ctggctgaca gagcgagatt ccatctcaaa 60
aacaaaaaca aaaaagatgg atgggcaggg agtggaggct gtgggtagtg attgctgtcc 120
atgacccctg tctgtgagca cctgctctct aagctgaggg aatccctggt gtcatcccag 180
cagtggcgtg ttccatgctg ctgtaggcca ggaacatggt gcagccgaag tggacggcca 240
tccagtgatg acttggcccc agtggacagc tgcccagtga tgggacatct ggagtagatg 300
gccgtccaac aacagttcat tattgttgtg ctacgtctgg tgtttccagt ggctggaacc 360
actagagctc cgctccattg ggttggagcc attccagggt gggaatggcc accaggagac 420
gatgcctacc cttctcttct tgcaccaagt cagcacccat actcaggcga ggccctgtgt 480
ctcctcctcc tccccagcat agtcttgctg gagtcatgta gaaaagtcat ggaaaggggc 540
ttgtgaaggg atacgctgcc ttcttcctgg gctctcctgg tatcccactg gtactcagtc 600
attctccttc caaactgagg tgtgtgcata catataattt gctggccctt aaaaaccacg 660

```
tgtaggcctg gctcctgtag tcccagcaat ttgggaggcc gaggcaggag gatcacctga     720
ggtncggaat tcgagaccag cctgaccaac gtggagagac cccatcttta ctaaaaaaaa     780
acaaagttgg ctggtggtgt ggtgcatgcc tggggccccc ctactcaggg gcctgaggcc     840
ggagaaacct ttgaaccccg gaagcggaaa ttgaggtggt ccgaggtctg ccattgcatt     900
ccacctggca aaagagggaa acc                                             923
```

<210> 687
<211> 528
<212> DNA
<213> Homo sapiens

<400> 687

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aacattgact gcctcaaggt ctcaagcacc agtcttcacc gcggaaagca tgttgtggct      60
gttccaatcg ctcctgtttg tcttctgctt tggcccaggg aatgtagttt cacaaagcag     120
cttaacccca ttgatggtga acgggattct gggggagtca gtaactcttc ccctggagtt     180
tcctgcagga gagaaggtca acttcatcac ttggcttttc aatgaaacat ctcttgcctt     240
catagtaccc catgaaacca aaagtccaga aatccacgtg actaatccga aacagggaaa     300
gcgactgaac ttcacccagt cctactccct gcaactcagc aacctgaaga tggaagacac     360
aggctcttac agagcccaga tatccacaaa gacctctgca aagctgtcca gttacactct     420
gaggatatta accctttacc ccattgttgg gaacgggatt tgggggaata aaaacttttt     480
gacgactctc gcccgtggga atgtgaagct ggatggactc catgaatg                  528
```

<210> 688
<211> 415
<212> DNA
<213> Homo sapiens

<400> 688

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tttcgtgcca ccatcaccac cactgcggtt gctgctgcag ctgcggctgc tgctctccct      60
ccggctgctt cttcgcgtgg ccagcagcga atggagcgat ggagcccaga ctgttctgct     120
ggaccactct ctttctcctg gccgggtggt gcctgccagg gttgccctgc cccagccggt     180
gcctttgctt taagagcacc gtccgctgca tgcacttgat gctggaccac attcctcagg     240
taccacagca gaccacagtt ctagacttga ggtttaacag aataagagaa attccaggga     300
gcgccttcaa gaaactcaag aatttgaaca cactgtacct gtataagaat gaaatccatg     360
cactagataa gcaaacattt aaaggactca tatctttgga acatctgtat attca          415
```

<210> 689
<211> 889
<212> DNA
<213> Homo sapiens

<400> 689

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tttcgtcgcg ccgctgcctc tggcgggctt tcggcttgtt gtgttaggtg aagagcgcac      60
cggccgcggg gggtaccgag ctggatttgt atgttgcacc atgccttctt ggatcggggc     120
tgtgattctt cccctcttgg ggctgctgct ctccctcccc gccggggcgg atgtgaaggc     180
tcggagctgc ggagaggtcc gccaggcgta cggtgccaag ggattcagcc tggcggacat     240
cccctaccag gagatcgcag gggaacactt aagaatctgt cctcaggaat atacatgctg     300
caccacagaa atggaagaca agttaagcca acaaagcaaa ctcgaatttg aaaaccttgt     360
ggaagagaca agccattttg tgcgcaccac ttttgtgtcc aggcataaga aatttgacga     420
atttttccga gagctcctgg agaatgcaga aaagtcacta aatgatatgt ttgtacggac     480
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ctatggcatg ctgtacatgc agaattcaga agtcttccag gacctcttca cagagctgaa 540
aaggtactac actgggggta atgtgaatct ggaggaaatg ctcaatgact tttgggctcg 600
gctcctggaa cggatgtttc agctgataaa ccctcagtat cccttcagtg aaggcttcct 660
tggaatgtgt gagcaaatac cctgaccagc tcaagccatt tggagacgtg ccccggaaac 720
tgaagattca ggttacccgc gccttcattg ctgccaggac ctttgtccag ggctgactg 780
tgggcagaga agttgcaaac cgagtttcca aggtaattga aaacgtgctt tctttctcat 840
tggtgttcct tgtttattct gtttttaaaa ccaatgttta aaaaaaaa 889

<210> 690
<211> 784
<212> DNA
<213> Homo sapiens

<400> 690
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ccccgatgga ttcgccctgg gccgggctcc tctggctcct ccctacgctg tggtcctcat 120
ttcctgctcc ggcctgctgg ccttcatctt cctcctcctc acctgtctgt gctgcaaacg 180
gggcgatgtc ggcttcaagg aatttgagaa ccctgaaggg gaggactgct ccggggagta 240
cactcccccct gcggaggaga cctcctcctc acagtcgctg cctgatgtct acattctccc 300
gctggctgag gtctccctgc caatgcctgc cccgcagcct tcacactcag acatgaccac 360
ccccctgggc cttagccggc agcacctgag ctacctgcag gagattggga gtggctggtt 420
tgggaaggtg atcctgggag agatttctcc cgactacacc cccgcccagg tggtggtgaa 480
ggagctccga gccagcgcgg ggcccctgga gcaacgcaag ttcatctcgg aagcacagcc 540
gtacaggagc ctgcagcacc ccaatgtcct ccagtgcctg ggtctgtgcg tggagacgct 600
tgcgtttctg ctgatttatg gagttctgtc aactgggga cctgaagcgt tacctccgag 660
cccagcggcc ccccgagggc ctgtcccctg agctaccccc tcgaaacctg cggacgctgc 720
agaggatggg cctggagatc gcccgcgggc tggcgcacct gcattcccac aactacgtgc 780
acag 784

<210> 691
<211> 475
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(475)
<223> n = a,t,c or g

<400> 691
agagattaga atagatnacc ataggccaga gaggaggaat tcgcacagga gccagcactc 60
aagacaatct ccagcatggg ctgggctcct ctcctactca ctctgctcgc tcactgcaca 120
gggtcctggg cccagtctgt gctgactcag ccgccctcgg agtcggaggc ccctggccag 180
tgggtcaaca tctcctgcac tgggtctggc tccaacctcg ggcaggtttt tgatgtacaa 240
tggtaccagc taattccagg aacagccccc aagctcctca tctttaataa caatcgtcag 300
ccctctggag tccctgaccg attctctgcc tccaagtctg gaacctcagc ctccctaacc 360
atcaatgatc tccagcctga ggatgagtct gaatattact gccttgctat gacagcagcc 420
tcactggtgt cttcggaact gggaccaaag tcacctgcct gagtcagccc aaggc 475

<210> 692
<211> 1028

<212> DNA
<213> Homo sapiens

<400> 692
accggatgga gttccgggtc gacccacgcg tccgggctgc agcagcgcat tctggggcat 60
ggttcggcgg gggcgcggag ggctcggttc ggagggggcc gggagcccgg gcgccctgga 120
gtgaggagga ccgggagctg gctctggagg ctgcggaggc gacgccggag agaacgaagc 180
ctcggctggg agcggatctt tcgaagatgg tttggctgcc ttggagattt ggagatctga 240
tgccacgatg aggactcaca cacggggggc tcccagtgtg tttttcatat atttgctttg 300
ctttgtgtca gcctacatca ccgacgagaa cccagaagtt atgattccct tcaccaatgc 360
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cagggctgcc agctcgcacg agcacattgc agcccgcctc acggaggctg tgcacacgat 480
gctgtccagc cccttggaat acctccctcc ctgggatccc aaggactaca gtgcccgctg 540
gaatgaaatt tttggaaaca acttgggtgc cttggcaatg ttctgtgtgc tgtatcctga 600
gaacattgaa gcccgagaca tggccaaaga ctacatggag aggatggcag cgcagcctag 660
ttggttggtg aaagatgctc cttgggatga ggtcccgctt gctcactccc tggttggttt 720
tgccactgct tatgacttct tgtacaacca cctgagcaag acacaacagg agaagtttct 780
tgaagtgatt gccaatgcct cagggtatat gtttgtaacc ttaatactag gcgcggatgg 840
cgattcaaat acctgcacaa tcatcagccc accaactgta tggctttgct cacgggaagc 900
ctagtcctga tgaatcaagg atatcttcaa gaagcctact tatggaccaa acaagttctg 960
accatcatgg agaaatctct ggtcttgctc ggggaggtga cggatggctc cctctgtcga 1020
ctgtttgc 1028

<210> 693
<211> 620
<212> DNA
<213> Homo sapiens

<400> 693
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taagatacca ctcctgctcc aaagattaca gatcccttgt cattctgact cctgggctta 120
ccctacaccc cagagatgga gcaactacta ggaataaaac ttggctgcct gtttgccctg 180
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attcagaagt tcatggtgca gatcagcaag tgagagaaat tcttctggtg atgctgattc 420
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ctttttggag tcgctggcat tgcagtgctg tcctggggct gctggaggat cgacagtgca 540
ggacgaagaa tggggtgggg ctcatatctt cgaactccac agccatggac atttaccctc 600
accctcaaag ggtcccctcc 620

<210> 694
<211> 851
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(851)
<223> n = a,t,c or g

<400> 694

cgagtgtcca caggaaggga actatcagct cctggcatct gtaaggatgc tgtccatgct 60
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tgcagcagca gcctcttctc ttgagatgct ctcgagggaa ttcgaaacct gtgccttctc 180
cttttcttcc ctgcctagaa gctgcaaaga aatcaaggaa cgctgccata gtgcaggtga 240
tggcctgtat ttctccgca ccaagaatgg tgttgtctac cagaccttct gtgacatgac 300
ttctggggt ggcggctgga ccctggtggc cagcgtgcac gagaatgaca tgcatgggaa 360
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caacaagtcc cccatgcagc attggagaaa cagcgccctg ctgaggtacc gcaccaacac 600
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tggggaagct taagaagact ggctcttatt actcaccgga tggtcaacgg gaatttggtc 780
cagggatccc tcaaattccc ngggttaata ccggaaagac aggccacccc ctttgtgctt 840
ggaataaagt t 851

<210> 695
<211> 995
<212> DNA
<213> Homo sapiens

<400> 695
gtacatgcgt gcaattctcg ggtcgacgat ttcgtcttcg ctgtagacga tttcgtcgct 60
tggagtggaa gagtgggtgt ggagggcga ggctatcacg aaaagagagg aggaatcagt 120
aggaagttgc tgcctgtcct ggacccatct ggggattact actactggtg gctgaacaca 180
atggtcttcc cagtcatgta taacctcatc atcctcgtgt gcagagcctg cttccccgac 240
ttgcagcacg gttatctggt ggcctggttg gtgctggact acacgagtga cctgctatac 300
ctactagaca tggtggtgcg cttccacaca ggattcttgg aacagggcat cctggtggtg 360
gacaagggta ggatctcgag tcgctacgtt cgcacctgga gtttcttctt ggacctggct 420
tccctgatgc ccacagatgt ggtctacgtg cggctgggcc cgcacacacc caccctgagg 480
ctgaaccgct ttctccgcgc gccccgcctc ttcgaggcct tcgaccgcac agagacccgc 540
acagcttacc caaatgcctt ttgcattggc aagctgatgc tttacatttt tggccgcatc 600
cattggaaca actgcctata cttttcccta tcccggtacc tgggctttgg gcgtgaaccc 660
atgggtgtac cccggacccc ggcgccaacc tgggttttga ccgcccgggg gggccccgta 720
acctcttata agctttttaa ttttttccac cccctggata cctggattat acaggggggc 780
gaataaaacc cggccgccca gtcccaggga aacaaaaaag aacctctctt cttgtggggg 840
ggcgactttt tctagttagc gccggtcaat ggggtttccc ccccccccct ccttgggcct 900
tcccaggaga gctttgtgcc cttctcaaag cacgagagca ctgtgcgaaa tgggcgctct 960
ttctttcccc aaagaacttt gcgcccttgg gttcc 995

<210> 696
<211> 860
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(860)
<223> n = a,t,c or g

<400> 696
caagaatacc agaaagaatg gagtcctgga gagaaagagc tacttatata aatctgcatg 60
gggctccttg gagtcttgtg gaataccacc ctgcacatgt gtaggatgag actgcaagat 120

actgggcaga aaataagaac agggagctgt gagctgcatg gttcccagag ctcacacagc 180
accgggaacc ttcgagttct gcccagccac aatggagaga ccttgcattg agtcaagagc 240
ccaggagggc cgtgcctgag atgcatggct aaaagagctt tttaggaaag gttactacag 300
acctaccatg accagggtga aaaaacaagc ctcagaagca tgaaggtgat ccacaagcaa 360
cttaggagtt gaaagaaaaa gagagagaga gagaggaggg aggaaggaag ggcggaagga 420
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<212> DNA
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<211> 559
<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

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<211> 473
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<210> 702
<211> 1127
<212> DNA
<213> Homo sapiens

<400> 702
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<211> 785
<212> DNA
<213> Homo sapiens

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aatct 785

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<211> 1030
<212> DNA
<213> Homo sapiens

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<210> 705
<211> 1064
<212> DNA
<213> Homo sapiens

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<211> 413
<212> DNA
<213> Homo sapiens

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<210> 707
<211> 311
<212> DNA
<213> Homo sapiens

<400> 707
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<210> 708
<211> 1196
<212> DNA
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<210> 709
<211> 833
<212> DNA
<213> Homo sapiens

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<211> 490
<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

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<210> 711
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<212> DNA
<213> Homo sapiens

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tctgggaggg tgggtcagtg cacccgaggc tcagagcatc catccacccc actggccctc 1260
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ataaataatt gaacaaatta aaa 1343

<210> 712
<211> 648
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(648)
<223> n = a,t,c or g

<400> 712
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ggggtgtata tagaagctac aggacaagtg taatttttat cattgcatgg ggagcattga 180
cataatttct actgcagctg agcatttttt aatatggata ataggattct gcaagtgata 240
catttggtca gagaacttaa taaactagtc aagtgggata ggtcctgtga cagaattgtg 300
tgatacaggt caaacaggag ttgggttatg gggaaaatgc cagttgaaat atgttttgat 360
ctttggagaa acctattttt tcatttaacc tgttctttaa atccagtatg ttccagaaca 420
tacaaaaatg tttaaatgtt ccatttgtaa gaggatatca tgtattttat atcaatttaa 480

atgcagttat cctaatcatt tttctttcat ttttaccctt tattaactct tcatttgttt 540
acaaaacaaa tccactctat gaacgcaatc tctaattatg tgntttcttt cagggatcca 600
aaccttgaaa cctttgctct agatgtcagg cttgtttttg acaactgt 648

<210> 713
<211> 393
<212> DNA
<213> Homo sapiens

<400> 713
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acctgcagtt ccttctccgg gatggacgtg gggcccaact ccctgcccca ccttgggctg 120
aagctgctgc tgctcctgct gctggtgacc ctcaggggcc aagccaacac aggctggtac 180
gggattccag ggatgcccgg cctgcccggg gcaccaggga aggatgggta cgacggactg 240
ccggggccca agggggagcc gggaatcgac gccatttccc tgatcctatg acccgaagga 300
cagtaaggaa aacccgggtt tttcggacgg aaccgtaaat atggccccat gggaacctcg 360
tgggaagcaa ccgggggcca ggccccatgg tag 393

<210> 714
<211> 615
<212> DNA
<213> Homo sapiens

<400> 714
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gctcctagtg gtttttttcca ctttgttgaa ttgttcctat actcaaaatt gcaccaagac 120
accttgtctc ccaaatgcaa aatgtgaaat acgcaatgga attgaagcct gctattgcaa 180
catgggattt tcaggaaatg gtgtcacaat ttgtgaagat gataatgaat gtggaaattt 240
aactcagtcc tgtggcgaaa atgctaattg cactaacaca gaaggaagtt attattgtat 300
gtgtgtacct ggcttcagat ccagcagtaa ccaagacagg tttatcacta atgatggaac 360
cgtctgtata gaaaatgtga atgcaaactg ccatttagat aatgtctgta tagctgcaaa 420
tattaataaa actttaacaa aaatcagatc cataaaagaa cctgtggctt tgctacaaga 480
agtctataga aattctgtga cagatctttc accaacagat ataaattaca tatatagaaa 540
tattagctgg aatcatcttc attactaggt tacaaggacc aacactatct caggccaagg 600
gcaacctttc taaac 615

<210> 715
<211> 769
<212> DNA
<213> Homo sapiens

<400> 715
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aaaagtacac attattatag catattttat gcaaataaaa gagaaataaa tatagttgag 120
aattaaatat gcagcaagtt actttgcaag gtgtcatatg gtcagtggat ggataacaaa 180
gacgcagttc ttgcttttag gaagagggaa aatttgcatg tataaatgca taaaacagct 240
acaggtaaga aaaacagatg tgataaccac aaaacagatt aattatgaag aaattaattg 300
tcttaatcat attatgctta caactaagtt ttggtaaatc catttaaaat tttggtattg 360
tatatcagta tgcattaatt cattaattca ttccattata tttattgaga ctctaccaca 420
tttcagacat gaatatatag gcatgaataa aacaaaaatg gttgcttgaa gacatggaat 480

caacctaaat gcccatcgat gacagactga ataaagaaaa tgcagtacat atacaccatg 540
gaacactatg cagccgtaaa aaagaatgag atcatgtctt ttgtggaaac atggatgaag 600
ctagaggcta ttatccttac cagacgaatg ccggaacaga aaaccaaata ccacatgttc 660
taacttataa atgggagcta aatgaagaga actcatgaac gccgagaagg caataacaaa 720
cactggagtc tacttgaggg tggaggggcg aaaggagtag tcctcccaa 769

<210> 716
<211> 743
<212> DNA
<213> Homo sapiens

<400> 716
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gtggattctt ggcaagcatg tggaagctta agcttaagat ttgatttttc tgatattata 120
ggccaatcac tttggatatt agatttttaa gattgatttt ggaatttctc atccattagc 180
aggttttcac ctttctcctt aaactcatag ttttccttga aatcatacag catatttgta 240
gcaatctgac agcataaata tacacaacac aaatggaacg acttatgaag gaattacttg 300
tgaaagctca ttggagtaaa atttcctctc aaacaatact ttaggtcata tgactgagtc 360
tattaactat ttttctgtta taccctgcca gaaaagaatt ttaaaagtta gtttatgttt 420
tgtgtaacca tgttcttcag aatgcaggta tgtgagcatc atggtttctg ggtaattctg 480
ctgctcctgt ctttgaaaat ggagatacca cttgcagctt atcccactgc tgagtattcc 540
agcattggta gtggtttcac tccattgcat ccatccagaa ctttcacaca ggcctcccca 600
ttacccagca ttttttaaca ttgatcaata aggcctataa ccagatttag gctagcaaca 660
ccagaggtct gggggcaagg gtggaaattg actttacatt cttagtagct aatattccat 720
aagtgcttta tatatatatt gca 743

<210> 717
<211> 630
<212> DNA
<213> Homo sapiens

<400> 717
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atgtgactga cactgtgtat atgccatagg ctcaaagcct gttggtttta gcattttaaa 120
actacaaagt ttacctttta ctctgtaatg tggccttgta tgtttcaata caaaaataca 180
gatactttaa aaattcctgc tcagggaaga tgtgtctatt ctgtagcttt gtaaacgtca 240
ctttaggaag cacagacccc atgtgctgtc cagcacagtg gctggcacag aggatgccct 300
gggcctttgt gagcattagg aaggcctggc ctctgggaag gatgagtgga gcttcccaga 360
ggctgaagga ggaggagtag ctggtcacca cggggcctct cctgcagggc tttgagtctg 420
cccgcgacgt ggaggcgctg atggagcgca tgcagcagct gcaggagagc ctgctgcggg 480
atgaggggac gtcccaggag gagatggaga gccgctttga gctggagaag tcagagagcc 540
tgctggggac cccctcaggt acagggtcac aggcatccaa gctcccgtga ctgctccttc 600
ttaagctatt ttgccgaagc aggacccaat 630

<210> 718
<211> 432
<212> DNA
<213> Homo sapiens

<400> 718

tgagaattct ccttgtcatc ttggcatgta tacttgtctg cataaaacac atgccacgtt 60
tgtggagacg gaatctggga cactgtcaga ttatgttcgg tctggttcat ggtcattgtc 120
aactgagctt tggataattt ttcactacag ctataaccat gactgctttg ctgtagcttt 180
agccattcct gggcttggaa caggtagagt ttagcttctt ttccaacagc tactgctatg 240
ttgttgattc tgacacacag aagagcatgg tcaccatgga actcgaagtg gccgatgcgc 300
tggccctggg cgtcctgggc cgcggtgctg ctgaagctgc cccgcagggt cttaccctgg 360
ctgccctgcg gccaccagca gcacgtgagg gccacagcca gcagccgcag cccccccatg 420
cccgtcacga aa 432

<210> 719
<211> 878
<212> DNA
<213> Homo sapiens

<400> 719
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cgagtagctg ggactacagg cgtgcatcac cacgcccgcc taatttttgt attttcagta 120
cagatggggc ttcactatgg cagccagggt ggactcgaac tcctgacctt gtgatccacc 180
cgcctcggcc tcccaaagtg ctgggattac agtcgtgggc caccgtgccc agccagggac 240
ctctattctt tgaactacaa ggcaaggtca tcctcccacc cccttatcca ttcagtgaac 300
atttactgag gcgttactct gtaaagaacc ctgagagaga ccaggctgag taagacaggc 360
tttactgccg atttacttcc aatatgctcg cttttcatct ctgacattct gtggtcttat 420
gaaaatggaa atggagacaa aaagatcatg gcgcccccag tcccatggtc atttcacatt 480
ccaatttctt cttagttgga cttttgaatt aattttattt cactttgtcc cttttttttcc 540
ttatttgctt ttttaatttc ttctcttcct cttcctggga catcaaccat ccaatttaac 600
ctttcatcct cccctactac ctaatccttg aaaaatacaa gcccaaaatc atttcatcac 660
cagtaattgt ctttaaattg ctccaataat ttgcaaggac catggggaaa agagaaagat 720
taaaaagccc tacgcccaga gaaccagatt gtataacaag tcgaaaatca agtttactaa 780
tcaccattca tggccttgaa cttttaataa aaccttcatt gcctggaata aatccaattt 840
ttgagaaaaa cttaattgga tttaaaaatg gcgccctt 878

<210> 720
<211> 446
<212> DNA
<213> Homo sapiens

<400> 720
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ctctccctct ctccctgtct gtctctcctc tctctttcca cctgtgcctt tctgtttgtc 120
cttctctgcc tttctctcac tcttcctctc tgcttccccc gcctcccacc ttttccttct 180
cttcaataca ccttccctct ccccсttcag gacgcctcac atccactgcc ttgccaggga 240
aggcgtgcga ctgactcagc acatctctgc cacctccatc tgcagcccaa gctggtccgt 300
gttcttgacg ggaagatacc cgatctgatc agatgaagaa cacagagtgt ggagacatga 360
agaggctttg gtgagtccac actgtaaagg gagcaggacc atgacgtctg gccccaaggt 420
tgtcaacccc aaatgcaaga tccttc 446

<210> 721
<211> 957
<212> DNA
<213> Homo sapiens

<400> 721
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tttacttatc tgtgtatata gtgtacataa aggacagacg agtcctaatt gacaacatct 120
agtctttctg gatgttaaag aggttgccag tgtatgacaa aagtagagtt agtaaactaa 180
tatattttgt acattttgtt ttacaagtcc taggaaagat tgtcttctga aaatttgatg 240
tcttctgggt tgatggagat gggaagggtt ctaggccaga atgttcacat ttggaagact 300
ctttcaaatt ataactgttg ttacatgttt gcagtttatt caagactgct gtatacatag 360
tagacaaatt aactccttac ttgaaacatc tagtctatct agatgtttag aagtgcccga 420
tgtatgttaa atgtataggt agtaaaatac cactttgtaa atatcttttt gctaaaattc 480
ataggaaatg cttttggaaa ttgaattgtg aagccacctt tgtgaacagt atagtaatgt 540
ctatacttgt tcaatagttt agaggaggta ggagggaaga aattgcaaaa ggtaatatta 600
ctagtgtgtt catacttgga cattttcaga caccattttt ctatatgttt tgggcatttt 660
gttttgctct gtatatagta tatataatgg acaaatagtc ctaatttttc aacatctagt 720
ctctagatgt taaagaggtt gccagtgtat gacccaggag tacacttagc atatttgag 780
cactttgggt tgcacttcct aggaaaactt gccttttggt aagactttttg ccaggaattc 840
ctctgacctt tcttattatt accgcgcccg gccggttcac ctggatgacg acaacgatgt 900
cggctgtggt caccttgggg gcccaactgg ccccttgtca tactccttga ttgagcc 957

<210> 722
<211> 925
<212> DNA
<213> Homo sapiens

<400> 722
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tgtcggggct gctccgccgc aacctgcagc ccacgctcac ctactggagc gtcttcttca 120
gcttcggcct gtgcatcgcc ttcctggggc ccacgctgct ggacctgcgc tgtcagacgc 180
acagctcgct gccccagatc tcctgggtct tcttctcgca gcagctctgc ctcctgctgg 240
gcagcgccct cgggggcgtc ttcaaaagga ccctggccca gtcactatgg gccctgttca 300
cctcctctct ggccatctcc ctggtgtttg ccgtcatccc cttctgccgc gacgtgaagg 360
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acatgcagct ggtaaggatg taccagaagg actcggccgt cttcctccag gtgctccatt 480
tcttcgtggg ctttggtgct ctgctgagcc cccttattgc tgaccctttc ctgtctgagg 540
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aacggcttgt tggaactgct cgtcccccac agggggcccc ccgcttcctg gactgggaaa 840
gaaacttgcc tttgaaaaca ccagccctct tggaagaaga agacaaacct ccctcaaaag 900
gcctatagtt tatactaacg cctac 925

<210> 723
<211> 833
<212> DNA
<213> Homo sapiens

<400> 723
aaacagcgtg gtcagggaag gcttctccgc taaaggaagt agctacagga aggcaggatg 60
tgccgggcag gggagacagc aaaggcaaca gcctgagagg ggaccctgcc tgggggtcag 120
tgtggctgag tggcctgagt gaggagcaga aaggggaggc gaggtggaaa tgtgggggc 180
cagggcctgg gcctggctgg tggccctgat ggcccagggg cctctgtctc cccccaacag 240
ccctgctcct ggacatcatg acggtggccg gcgtgcagaa gctcatcaag cggcgcggcc 300

cgtacgagat gagccccagc ctcctggact acctcaccat ggacatctac gccttcccgg 360
ccgggcacgc cagccgggcc gtcatggtgt ccaagttctt actcagccac ctggtgctgg 420
cggtgcccct gcgcgtgctg ctggtgctct gggccctctg cgtgggcctg tcccgcgtga 480
tgatcggccg ccaccacgtc acggacgtcc tctccggctt tgtcatcggc tacctccagt 540
tccgtatgat ggagaaggtc agcatgcagt acaaaacttg ccgaatgctt atttttgtct 600
ggcgaagagc gcgtcggccc acacatacct ttgagggcag gctggtctct aaaaaggggc 660
aagacctggc caggtggctc agcctgtaat ccaaaccttt cagaggccca gtgggagcat 720
aatttaacct ccaatttgat acaagcttgg aacatggcgt cctctttttt cagacttttg 780
aaagacacgt tatctgcctt tgctgcctct ctatgagttt ctcagggccg ccc 833

<210> 724
<211> 575
<212> DNA
<213> Homo sapiens

<400> 724
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ttccccagac cttctgcaga ttctgtggtt atactcactc ctcatcccaa agaatgaaat 120
ttaccactct cctcttcttg gcagctgtag caggggccct ggtctatgct gaagatgcct 180
cctctgactc gacgggtgct gatcctgccc aggaagctgg gacctctaag cctaatgaag 240
agatctcagg tccagcagaa ccagcttcac ccccagagac aaccacaaca gcccaggaga 300
cttcggcggc agcagttcag gggacagcca aggtcacctc aagcaggcag gaactaaacc 360
ccctgaaatc catagtggag aaaagtatct tactaacaga acaagccctt gcaaaagcag 420
gaaaaggaat gcacggaggc gtgccaggtg gaaaacaatt catcgaaaat ggaagtgaat 480
ttgcacaaaa attactgaag aaattcagtc tattaaaacc atgggcatga gaagctgaaa 540
agaatgggat cattggactt aaagccttaa ataca 575

<210> 725
<211> 867
<212> DNA
<213> Homo sapiens

<400> 725
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ctgtgtgcat aggaccctgg gaccctggga tttaagtcat atggaacttg gtcaactcct 120
ccaaaatgct cccagcgctc acaggggctg ccttggtgtt tggaaggagg tggtgccaaa 180
gcagttggtt tgctggattt tgactttctt tttttaaagt ggtatttgca aatactaccc 240
cgagggcaat ggttaatgga tttgaccttt gggtcatggg ggccagggag caacactcat 300
aggagctgtg tgtgtgagtg ctgcggtgcg gcgtcgggct gctgactggc tctgccactc 360
acctctcagg ccttaagaat actgaagatt ctcacctacg attggaggcg atggtgggag 420
tggtccttaa tactgcttta tagaaaatca tagtggaggc cacgcgccgt ggctcatgcc 480
tgtagtccca gcacttcggg aagccgagat gggcggacca cgaggtcagg agatcaagac 540
catcctggct aacaccgtga aaccccgtct ctactaaaaa tacaaaaaaa ttagccgggt 600
gtggtggctg actcctgtat tcccagctac tctgaaggct gaagcaggaa aatggcgtga 660
acccaggagg cggaacttgc agtgaaccga aatcgtgcca ctggactcca acctgggcga 720
cagaaagaga ctccgcctca tataaccccc tctggcgagg aatagaaata agaacccttt 780
gcggaaacca ccagggggcc ccgtgtcgcc caggggaccc tggcctcaag ttttataaaa 840
aggttgcccc aactttttt ttccccc 867

<210> 726
<211> 861

<212> DNA
<213> Homo sapiens

<400> 726
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tgggccacga cgctaggccg gttcctcaaa ggcgcggcct ctgtacggag cagggtacgc 120
agcgtgtgtc gccccatttg tgggggccgc ggaggagggt atgtgcgctt gcgcagtccg 180
cgcgctgagc cttgcgggag ggcagttct cttgtctagc ctgtgcgcgt gtgctagggc 240
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gcatcttggt atttgctgat cctctgtcct gacttgatct tgcactcagg aaagatcttc 420
aagaattacc taattttggc ctggcgcggt ggctctcgcc tgtaatccca ccactttggg 480
aggccgaggc ggttggatca actgaggtca gaaattcgag atcagcctga ccaacatggt 540
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catggctcta ttgcacttca tattgggcta cataaacgaa tctcccgctc gcagataccc 720
atccctagaa ttacctattt tgggcgattt tgttaataaa aagaattttt ttggtttata 780
gtccaatgag ccatcccttg gtcagaaccc ccccacacgg aatatttctg catttgtttt 840
agccaaagcc tttgtgttct t 861

<210> 727
<211> 642
<212> DNA
<213> Homo sapiens

<400> 727
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cattattcat ttaacagagg acagatttc aaaagaaaaa cagttcagaa ttgcaggcac 180
acatgcgcaa accctgggtc agttgaaaga ttgatttggg aatttcaata ggcaaatttg 240
gccaatgata caaatctttg gtgggagttt gctgcccaag ctaaaacctt tatacatgtt 300
ttatgaattt gcaagtttgt gatgtctgaa atcaaatgaa ctgagagttc tgctaattgt 360
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cacctagggt ctgtcgcatg tcaacaccgg ccagggctgc cagaccccgc cggcgcgaaa 480
taaaaagaac tctgaacgtc atctttggta ctgactaata gaatatatcc acacacctgg 540
tgacgtggtt taagcttttc cttaagggta ctgattggta actggcatga acttgactct 600
gctcaggagg ctaaaaccca cacccccatc ttttacgggc ct 642

<210> 728
<211> 872
<212> DNA
<213> Homo sapiens

<400> 728
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gtgacgtaga cattctcccc tgttttcttc taaaagttgc aaggtttgga ttttcttatt 120
taggtcttta atccttctag aaattatttt taggaatgat acaagttagg aatctaattg 180
tacttgtttg cttccttgta gagttattga acgttcctgt attgttcctg tattccaggg 240
gttggcagac tttgacccat gggctaactc aactcaaaac tgcctttttt ttgtaaatta 300
agtttgattg ggacacagcc ctacccattt gtttatggct gcatttgtgc tacaacagca 360
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gctctttaca gaaaaagctt gcaaacccat ggtctaaaag atagtcatga aagagtagct 480

catatttcca acagtagcag atatagtcag tgaaaataga ggaaattaca ctaaaggttg 540
taagaaggaa ggaaaacaat cttttggaca tgtaaaaaat acaaagtttg ggccgggcgc 600
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ccaggaggtc aagatcagcc ctgcccacct gggggaaccc cggcttgtgt agaatacaaa 720
aaattaccgg gcgcgggggc aagcgcccgg aatcctagca cctaggaggt tgggcaggag 780
aactgtttga ccccggagcg aagggttgac ttcgcacaga ccccacccct gccccccgct 840
ggggccatga atggggaccc ttctcaaacc cg 872

<210> 729
<211> 2563
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2563)
<223> n = a,t,c or g

<400> 729
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ttttcctgtt tccccggtcc gtcattgtgc agcctgcagg cctcaactcc tccacagtgg 180
cctttgatga ggctgatatc tacctcaaca taacgaatat cttaaacatc tccaatggca 240
actactaccc cattatggtg acacagctga ccctcgaggt tctgcacctg tccctcgtgg 300
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<210> 730
<211> 988
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<211> 454
<212> DNA
<213> Homo sapiens

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gtggataatt ttttattatt aaaaatttat gaag 454

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<211> 897
<212> DNA
<213> Homo sapiens

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<210> 734
<211> 834
<212> DNA
<213> Homo sapiens

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<210> 735
<211> 724
<212> DNA
<213> Homo sapiens

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aaaa 724

<210> 736
<211> 355
<212> DNA
<213> Homo sapiens

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gacaccccgt agaattatac ccagactctt ttaagggaaa aactgctcat tattg 355

<210> 737
<211> 228
<212> DNA
<213> Homo sapiens

<400> 737
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aaactggtac tcatgaatga tgaatgtctg aggctcacat tctggctgca ctgcaatgct 180

aaacactaca gatatagcat gctgggcttt cctaaactga catctgtt 228

<210> 738
<211> 708
<212> DNA
<213> Homo sapiens

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<210> 739
<211> 1798
<212> DNA
<213> Homo sapiens

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<211> 393
<212> DNA
<213> Homo sapiens

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<210> 741
<211> 360
<212> DNA
<213> Homo sapiens

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aagaccagaa aacaaaagca tcagaattat cttttgctat gtccaacttg gttccgaaag 360

<210> 742
<211> 908
<212> DNA
<213> Homo sapiens

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<210> 743
<211> 434
<212> DNA
<213> Homo sapiens

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acgtgttccc accc 434

<210> 744
<211> 786
<212> DNA
<213> Homo sapiens

<400> 744
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<210> 745
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<212> DNA
<213> Homo sapiens

<400> 745
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gcggggacat cgtgatgacc cactctccag actccctggc tgtgtctctg ggcgagacgg 120
ccaccatcga ctgcaggtcc agccagagtg tcctctacca cgccaacaat aaaaactact 180

taacttggta ccagcagaga ccacgacagt ctcctaaagt gctcattttc tgggcatcta 240
cccgggaaac cggtgtgcct gaccgattca ctggcagcgg gtctgggaca gattattcgc 300
tcaccataag cagcctgcag gctgaagatg tggccactta ttactgtcaa caatattatg 360
attctccgat caccttccg 379

<210> 746
<211> 440
<212> DNA
<213> Homo sapiens

<400> 746
cccgtagacg tcttacctgc ctacgccaag cttggcacga ggggtctctg cagtgagtgg 60
ggagcctaca taaaagagag taaagagggg caaaaaccca gatcagaatg caggcgacgt 120
ccaaccttct caacctcctg ctgctgtctt tgtttgccgg attaaatcct tccaagactc 180
acattaatcc taaagaaggg tggcaggtgt acagctcagc tcaggatcct gatgggcggg 240
gcatttgcac agttgttgct ccagaacaaa acctgtgttc ccgggatgcc aaaagcaggc 300
aacttcgcca actactggaa aaggttcaga acatgtccca gtctattgaa gtcttaaact 360
tgagaactca gagagatttc caatatgttt taaaaatgga aacccaaatg aaagggctga 420
aggcaaaatt tcggcagatt 440

<210> 747
<211> 942
<212> DNA
<213> Homo sapiens

<400> 747
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atacttctat atgaaatatg taggctacaa aacagtatat acagtttaat accattttta 120
tggaaagaaa aataaccata tatacaaaat catgcataag aaaaaaataa tataaggatg 180
tacataccaa atattaataa taatggctat ctctggatag tggaatcaga gggattatgt 240
aattttcctg ataaattttc ctgtcctcca aacagcatcc gcttcatact attatttctt 300
ggttgtaatt agtttgatat aattctcttc agaaaggctc tgtttcacta tatatacctc 360
aaagcatact tttgatgcag cttctgcaat tcccatctaa aaagtagata acacttgctc 420
ttatattctg gcatatgaag actatttgta attaacacac tataaaatat gtcaaagcag 480
gccaggcatg gtggctcaca cctgtaattc caaaaccttg gcaggaagat cgattgaggc 540
caggagctca agacgagcct gggcaacata gaaagaccct atctttacaa aaaaaacttt 600
aaaaattagc caggtgtaat agcacatgcc tgtctgtaat cccagctact tggcaggctg 660
gaaggtcaag gctgcagtga gccatgatca tgccactgca ctccagccta ggtgacagag 720
caagaactca tctctaaaaa aaaattttta aataaagcaa aatatgccac agcatagatc 780
tgattgtaga aaattattat atggagaact gaaaatctc ctaatcaaga caaaaatttt 840
aaatagagga aaaaaatact atctatcatt agttcaagtt tccattaaga gtagagtgtg 900
aagtagctcc aagttcagag ctggagaatt ttgcatctct cc 942

<210> 748
<211> 1050
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1050)

<223> n = a,t,c or g

<400> 748
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tcgattacgg acatgcaaga tggaaaattg gttgtggcat ccagataagg gaaaacaagt 120
aggacaccag attgtataca ctgtgatcaa aaccatgtga aaaacacatg catgaagagg 180
actgggaaga aatacacaag aagtggttgc attagggtga gaaggagtat tcatgttttt 240
ctcatccgtc tttttcaaac cttttgtaat gggtggtttt attaatttta taatggaaaa 300
tgttaattta aaagcaagtt atttacagtt tagtaagctc atggcaggga aaggctgggc 360
tctgtttatt gctcttactt tttcccaacg cctactccca tgcctggcaa ttatagagat 420
aataaatgtg ggtgtggaat gagtgcccac tgggaaacct ctcagaggac tttgacccag 480
gaacatattt gcacagggtt tccctcagct ggagaaggtt tctctgggag agcaccagcc 540
aggtgtgtgt catgggatat atttacaggg tggtgagctc tcctggtcca acctaaaagg 600
tcccagcaag gtgtaggggc ccttctggcc atttgacatc accagggcag ttagtgctga 660
tacaaaccac agagaatgaa caaactccaa ctcaaacggg aatggatttt atgtcattct 720
gggactttca aacttgataa tagaccaagc atggtggctc acacatgtaa tcctagcact 780
ttgggaagcc aaggtgggag gatcgcttgc ggccaggaga ttgagaccag cctgggaaag 840
gtagcaagac ccagtctcta caaaaaaatt ttttgttctg ttttgttttt gagacagagt 900
ctcaactctg tcgtctaggc tggagtgcag tggtttgatc ttgggtnatt agtttctttt 960
tttgtgggtg ttgtgtttaa gtttttgttt tgggttaaat taatctggtc ttgggaatcc 1020
ttctttttat cgttggtgga gatttaaccg 1050

<210> 749
<211> 390
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(390)
<223> n = a,t,c or g

<400> 749
tcgcggaggt gcctcaacca tggcatggat ccctctcttt ctcggcgtcc ttgcttactg 60
cacagaatcc gtggcctcat atgaactgtt tcagccacct tcagtgtccg tgtccccagg 120
acagacagcc actttcacct gctctggaga tgacttgggg aacaagtata tttgttggta 180
tctgcagaag ccaggccagc cccccgtggt actcatgtat caagataaca agcggccctc 240
agggatccct gagcgattct ctggctccaa ttctgggagc acagccaccc tgaccatcag 300
cgggacccag gctacggatg aggctctata tttctgtcag gcgtgggaca cgaatggagc 360
tgtgttcgga ggaggcaccc agttgaccgn 390

<210> 750
<211> 441
<212> DNA
<213> Homo sapiens

<400> 750
gattcaggtg gtttaggtga tcaaattgtt ttagaagagc ttggtggtcc atgcctatat 60
cttgaaggga atccaactta gctttaatta acattcttaa ccttcttacc tctctggatc 120
tcagttgtct catctgtaaa aaggagataa aaattattta cctgcctgaa catgaggtgg 180
aggaccatcc tgctacagta ttgctttctc ttgattacat gtttacttac tgctcttgaa 240
gctgtgccta ttgacataga caagacaaaa gtacaaaata ttcaccctgt ggaaagtgcg 300

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aagatagaac caccagatac tggactttat tatgatgaaa tcgttttaga agagcttggt    360
ggtccatgcc tatatcttga agggaatcca acttagcttt aattaacatt cttaaccttc    420
cgcacgcgtg ggtcgacccg g                                              441
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<210> 751
<211> 449
<212> DNA
<213> Homo sapiens

<400> 751

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gtggggaatt ccccagcaat cagactcaac agacggagca actgccatcc gaggctcctg     60
aaccagggcc attcaccagg agcatgcggc tccctgatgt ccagctctgg ctggtgctgc    120
tgtgggcact ggtgcgagca caggggacag ggtctgtgtg tccctcctgt ggggctcca    180
aactggcacc ccaagcagaa cgagctctgg tgctggagct agccaagcag caaatcctgg    240
atgggttgca cctgaccagt cgtcccagaa taactcatcc tccaccccag gcagcgctga    300
ccagagccct ccggagacta cagccaggga gtgtggctcc agggaatggg gaggaggtca    360
tcagctttgc tactgtcaca gactccactt cagcctacag ctccctgctc acttttcacc    420
tgtccactcc tcggtcccac cacctgtac                                      449
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<210> 752
<211> 524
<212> DNA
<213> Homo sapiens

<400> 752

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tttcgtggcg aggcggcggt ggtggctgag tccgtggtgg cagaggcgaa ggcgacagct     60
ctaggggttg gcaccggccc cgagaggagg atgcgggtcc ggatagggct gacgctgctg    120
ctgtgtgcgg tgctgctgag cttggcctcg gcgtcctcgg atgaagaagg cagccaggat    180
gaatccttag attccaagac tactttgaca tcagatgagt cagtaaagga ccatactact    240
gcaggcagag tagttgctgg tcaaatattt cttgattcag aagaatctga attagaatcc    300
tctattcaag aagaggaaga cagcctcaag agccaagagg gggaaagtgt cacagaagat    360
atcagctttc tagagtctcc aaatccagaa aacaaggact atgaagagcc aaagaaagta    420
cggaaaccag gtagtctgga cattttcctt gctttttgat ttatttaggg gacaactgaa    480
aattttaagc taatgaataa agaggctgaa gaagaaaaaa aaaa                     524
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<210> 753
<211> 474
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(474)
<223> n = a,t,c or g

<400> 753

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nttganncac tgagacatta gtccangcgg nggaattcga tggcgctggc ggctttgatg     60
atcgccctcg gcagcctcgg cctccacacc tggcaggccc aggctgttcc caccatcctg    120
cccctgggcc tggctccaga cacctttgac gatacctatg tgggttgtgc agaggagatg    180
gaggagaagg cagcccccct gctaaaggag gaaatggccc accatgccct gctgcgggaa    240
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tcctgggagg cagcccagga gacctgggag gacaagcgtc gagggcttac cttgcccccct 300
ggcttcaaag cccagaatgg aatagccatt atggtctaca ccaactcatc gaacaccttg 360
tactgggagt tgaatcangc cgtgcggacg ggcggaggct cccgggagct ctacatgagg 420
cactttccct tcaaggccct gcatttctac ctgatccggg ccctgcagct gctg 474

<210> 754
<211> 1222
<212> DNA
<213> Homo sapiens

<400> 754
cagatcctca tctccctggg tagtgaggct catcacagac aagcaaccaa ctgctgggct 60
gccggtgccc cccatgttgg aacctgagtt ggagattatc tcctaagcag atacctgctt 120
ccaaactggg gatgtagggc ttggaaacta aaaaatgcca ggtctgaggg agaggaaaga 180
acaagtccag caatacacag agctctgtgt attcagaggg aagttggcag ggttgtgttc 240
gggcagagaa actccgagtg gtacaaaggg gacgtgccca gagtggagaa atcatgctaa 300
ttgtctgcac tagagctgga gaacgccacc caaaatgaag agagaaaggg gagccctgtc 360
cagagcctcc agggccctgc gccttgctcc ttttgtctac cttcttctga tccagacaga 420
ccccctggag gggtgaaca tcaccagccc cgtgcgcctg atccatggca ccgtggggaa 480
gtcggctctg ctttctgtgc agtacagcag taccagcagc gacaggcctg tagtgaagtg 540
gcagctgaag cgggacaagc cagtgaccgt ggtgcagtcc attggcacag aggtcatcgg 600
caccctgcgg cctgactatc gggaccgtat ccgactcttt gaaaatggct ccctgcttct 660
cagcgacctg cagctggccg atgagggcac ctatgaggtc gagatctcca tcaccgacga 720
caccttcact ggggagaaga ccatcaacct tactgtagat gtgcccattt cgaggccaca 780
ggtgttgggg gcttcaacca ctgtgctgga gctcagcgag gccttcacct tgaactgctc 840
acatgagaat ggcaccaagc ccagctacac ctggctgaag gatggcaagc ccctcctcaa 900
tgactcgaga atgctcctgt cccccgacca aaaggtgctc accatcaccc gcgtgctcat 960
ggaggatgac gacctgtaca gctgcgtggt ggaaaacccc atcaaccagg gccggaccct 1020
gccttgtaag atcaccgaat acagaaaaag ctccctttca tcaatttggc tccaggaggc 1080
atttcctcc ttgggacctt ggtgaagacc tggccaacaa gggaaaaccc cgtctttatt 1140
aaaaatacaa aaaatgcccc cgctttgggt gtaagggcct gttttcccgc gcccttcggg 1200
aggttttgaa cagtaaatct cc 1222

<210> 755
<211> 667
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(667)
<223> n = a,t,c or g

<400> 755
tttcgtgcac ggtgtgcacg ctggactgga ccccccatgc aaccccgcgc cctgcgcctt 60
aaccaggact gctccgcgcg cccctgagcc tcgggctccg gcccggacct gcagcctccc 120
aggtggctgg gaagaactct ccaacaataa atacatttga taagaaagat ggctttaaaa 180
gtgctactag aacaagagaa aacgtttttc actcttttag tattactagg ctatttgtca 240
tgtaaagtga cttgtgaatc aggagactgt agacagcaag aattcaggga tcggtctgga 300
aactgtgttc cctgcaacca gtgtgggcca ggcatggagt tgtctaagga atgtggcttc 360
ggctatgggg aggatgcaca gtgtgtgacg tgccggctgc acaggttcaa ggaggactgg 420
ggcttccaga aatgcaagcc ctgtctggac tgcgcagtgg tgaaccgctt tcagaaggca 480
aattgttcag ccaccagtga tgccatctgc ggggactgct tgccaggatt ttataggaag 540

acgaaacttg tcggctttca agacatggag tggtggtngg cccttgttgg gagaaccccc 600
ttccttccct ccctttacgg aaacccggca cttggttgcc agccaagggt ccaaaccttc 660
ggggaaa 667

<210> 756
<211> 411
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(411)
<223> n = a,t,c or g

<400> 756
atcctcctca gnggattttt ccttccttag taaagctgng tccatctgac actcagcctg 60
acccttcttc ctcctcttgg aaggcgcaag tactctcccc gacctcgtta aaactcaccg 120
aaatccctga agaaacttaa atgtcctgct cctgtccgcc ctgcttcttc accctcttcc 180
tccactctat ttgccaagac atctcctggt ttcatcccca aactcccacc ttagattctc 240
tcttaaactg gatagatgat ctcatctttt acggcactct gtataacttc ttcccagaag 300
agacgcctct gtttaccttc ctactcactc tatatctatc cctcctgctc ctttggctac 360
ctggcatggc cgcactccca cttgcagtaa tgcctaatta cctctacaaa a 411

<210> 757
<211> 388
<212> DNA
<213> Homo sapiens

<400> 757
tttcagccaa acttcgggcg gctgaggcgg cggccgagga gcggcggact ccgggcgcgg 60
ggagtcgagg catttgcgcc tgggcttcgg agcgtagcgc cagggcctga gcctttgaag 120
caggaggagg ggaggagaga gtggggctct tctatcggaa ccccctcccc atgtggatcc 180
gccccaagcg gaggtcgcgg aggaggttat cgaaaatatg cccgccctgc gccccgcttt 240
gctgtgggcg ctgctgagcc tatggctgtg ctgcgcgacc cccgcgcctg cattgcaatg 300
tcctgaaggc tatgaaccct ccccactaga ccgaaagtgc gctccctacc ccaatgtcag 360
acgatcctgc ccatgcccag aaggtttt 388

<210> 758
<211> 843
<212> DNA
<213> Homo sapiens

<400> 758
agcctgacca gttgttccca ggatccattg ttctccctcc ataaacaata aacagcactc 60
aggggaggga gggcccaaca ccggggtggg tgggcgccca gctgccgtcc tctgtgccac 120
atcagtaaac agcaacacaa caatcaactg ggcctttttg atgaagacaa aaccatagag 180
gaaaaccatt agaagaggta ataaaggccc ttcttataca gttaatagag agcctcctgg 240
atggaacaag accagctgtt gctactgaaa atttacttct gttttcaagt tcaaatagag 300
actaaaacat tatcttcacg ggaattgatt ttacgtcttc caaacacata tgccacctta 360
attgtgattt gtgtgatagt tcagctgctg aaagctttcg tttatctcta cctggttaaa 420

caactttaaa taataacaag tcaatatatc tgtttattga ccagggttct tctcatcccc 480
agagcacact gttgaagaag aaggtactta accctttgtt tccctagccc tgccacatat 540
ctcatttttc acattctcaa tggggagata taattgttta aaaaatggaa tgaagccggg 600
tggcatggct tacacttgta attccagcta tttgggaggc taaggcagga ggattgctcg 660
gggcccggag ttcaagacca gtctaggcaa catagtgaga ccccatctct acaaaaaata 720
aaaactaaca ccccgggttc ctgactactc aaaagggtga ggcagaggat cacttgagcc 780
cagaagcaga agctgggtga gctagactgg gcacgcactc ctcatggtgc agaagaaacc 840
tgc 843

<210> 759
<211> 647
<212> DNA
<213> Homo sapiens

<400> 759
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aagcaggtgt ccacgcgtcc ggccgtccat ccgtccgtcc ctcctggggc cggcgctgac 120
catgcccagc ggctgccgct gcctgcatct cgtgtgcctg ttgtgcattc tgggggctcc 180
cggtcagcct gtccgagccg atgactgcag ctcccactgt gacctggccc acggctgctg 240
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tgtgaggatg cctggctgcc agcacggtac ctgccaccag ccatggcagt gcatctgcca 360
cagtggctgg gcaggcaagt tctgtgacaa agatgaacat atctgtacca cgcagtcccc 420
ctgccagaat ggaggccagt gcatgtatga cgggggcggt gagtaccatt gtgtgtgctt 480
accaggcttc catgggcgtg actgcgagcg caaggctgga ccctgtgaac aggcaggctc 540
cccatgccgc aatggcgggc agtgccagga cgaccagggc tttgctctca acttcacgtg 600
ccgctgcttg gtgggctttg tgggtgcccg ctgtgacgtg taaggtg 647

<210> 760
<211> 796
<212> DNA
<213> Homo sapiens

<400> 760
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cgggaagcgg agattgcagt gagctgaggt cgcaccattg cactccagcc tgggtgacag 120
ggagagggac tctgtctcaa aaaaaaactg aggtcaggga gggtgagatg acggtgagag 180
ctcggacttg aacgcaggtc ccacccagaa cagcagccct aactctgagc aaggtctgtg 240
ctgttcagta gctctattga gatgtgattt ccacactgtg taattcattc acttacggtg 300
tacagtccag tgggtcttag catgctcggt gttgacagtc acatcgtctt cacccccaaa 360
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ccacaaatcc atgctctgtc tctgtagatt tgcctgttcc agacgtttca cagcaatggg 480
ccttttctgc ctggcttctt taacgttgca tcacatcttc aaggtccatc ccagctgcag 540
cgtgtcagtg cctcctggct tttcactgct gagtagtgcc cgttgcatgg acagaccacg 600
ttgtgctcac ctgtttgccc taatgggccc ctgcttgggg ctttccacct ttgggaggct 660
gtgaattgtg ctccagccac acttttgacc cccgcccggt ttccagaaga tgaccaggat 720
tggtcacttt cttcacccac ccaaggactt ttggtgggcc tgccgcaatc cgccccatcc 780
ttggtggctt gaggcc 796

<210> 761
<211> 721
<212> DNA

<213> Homo sapiens

<400> 761
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atctcccagc aggctgtgct ctgacagctc ttggatttaa ataggattct gggctctgct 120
cagagtcagg ctgctgctca gcacccagga cggagaggag cagagaagca gcagaagcag 180
ccaagagctg gagccagacc aggaacctga gccagagctg gggttgaagc tggagcagca 240
gcaaaagcaa cagcagctac agaagttgga acgatgctgg tcaccttggg actgctcacc 300
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tgcagagatg tactgaaggg ggagtctgct gccagtgaaa tccgagtgga tacaaagaac 540
tcccaggtgc tggtgcggaa attggaccta tccgacacca aatctatccg agcctttgct 600
gagggctttc tggcagagga aaagcagctc catattctga tcaacaatgc gggagtaatg 660
atgtgtccat attccaagac agctgatggc tttgaaaccc acctgggagt caaccacctg 720
g 721

<210> 762
<211> 716
<212> DNA
<213> Homo sapiens

<400> 762
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gggggcaatg gcggggagag cctttgtgga ccagggaagc tgggggggga gttccatgct 120
agctctataa gccaggctct ggggcagcat ccaagacgct ctgtattaga tactgaccag 180
tctcatgtgc cactggtgag gaggaagaca acgtgctttt cccaaagggc gatgatctcc 240
ccagatgatg acccttctca ggaggcagga gcgctttccc ggaataacct tttggctcct 300
tattcagctg ctgcagcaga tactcattag ttaccaccag ggatctctga ctttcatgga 360
gaatggcaac tgtcttctcc agctttttca gctgggcaag ctcctggttc aggcaagcca 420
cctgcatggt cagctgttgg tttttgtgca gaagatcatc ataagtatgt gactgttgcc 480
cactcacaat tgagatggca gcaccttcct ccaactgttg aatttttct gacaaaatga 540
ggttttcctc cagcactctg accagttttt gcttcaaact ttccgagaaa cttcttgttg 600
aggaggaggg ggccggagcc attccagtgc ttatccacaa gctccaggag ctgtctgagg 660
acagtggcca catggggggg tctggcagag atgggggac tgtggtttcc agccaa 716

<210> 763
<211> 642
<212> DNA
<213> Homo sapiens

<400> 763
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gaagaccgcg cggggctgga gacaggtagc agtacggggg cggggcttca tgccggatgt 120
gatagtctgc agtcgtttcg gttggcagcc tggcgggtgg gagatgcggc ggccacctgc 180
tgcaaagaac cgaagggaag gttagaagta cgaaggcagt ttggagctgg ggctaagcag 240
ctgtcgcacg gtcagatcat gggctccacc aagcactggg gcgaatggct cctgaacttg 300
aaggtggctc cagccggcgt ctttggtgtg gcctttctag ccagagtcgc cctggttttc 360
tatggcgtct tccaggaccg gaccctgcac gtgaggtata cggacatcga ctaccaggtc 420
ttcaccgacg ccgcgcgctt cgtcacggag ggcgctcgc cttacctgag agccacgtac 480
cgttacaccc cgctgctggg ttggctcctc actcccaaca tctacctcag cgagctcttt 540
ggaaagtttc tcttcatcag ctgcgacctc ctcaccgctt tcctcttata ccgcctgctg 600

ctgctgaagg ggctggggcg ccgccaggct tgtggctact gt 642

<210> 764
<211> 2280
<212> DNA
<213> Homo sapiens

<400> 764
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gctgccctca acctgggcat gcgcccccca cccttccggc cccccagaac ccgcgccatc 120
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<213> Homo sapiens

<400> 765

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<211> 580
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<213> Homo sapiens

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<212> DNA

<213> Homo sapiens

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<212> DNA
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<213> Homo sapiens

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<211> 1224
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<212> DNA
<213> Homo sapiens

<400> 775
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gcttaagggg tgtggtgaac gaaggatggg gcgtggctgt gtcaccaagg gcgtggtcat 180
ggagtagagg cccgggctcc tgggtgaggc cggcaagttt ggagcgtggt cagacaatag 240
gggcgtggct acggctcgcg gagcgcaacc aacgctctag accagacctg ggctcgagac 300
cataactgtt tggctttaac agtacgtggg cggccggaat ccgggagtcc ggtgacccgg 360
gctgtggtct agcataaagg cggagcccag aagaaggggc ggggtatggg agaagcctcc 420
ccacctgccc ccgcaaggcg gcatctgctg gtcctgctgc tgctcctctc taccctggtg 480
atcccctccg ctgcagctcc tatccatgat gctgacgccc aagagagctc cttgggtctc 540

acaggcctcc agagcctact ccaaggcttc agccgacttt tcctgaaagg taacctgctt 600
cggggcatag acagcttatt ctctgccccc atggactttc ggggcctccc tgggaactac 660
cacaaagagg agaaccagga gcaccagctg gggaacaaca ccctctccag ccacctccag 720
atcgacaaga tgaccgacaa caagacagga gaggtgctga tctccgagaa tgtggtggca 780
tccattcaac cagcggaggg gagcttcgag ggtgatttga aggtacccag gatggaggag 840
aaggaggccc tggtacccat ccagaaggcc acggacagct tccacacaga actccatccc 900
cgggtggcct tctggatcat taagctgcca cggcggaggt cccaccagga tgccctggag 960
ggcggccact ggctcagcga gaagcgacac cgcctgcagg ccatccggga tggactccgc 1020
aaggggaccc acaaggacgt cctagaagag ggaccgaga gctcctccca ctccaggctg 1080
tcccccgaa agacccactt actgtacatc ctcaggccct ctcggcagct gtaggggtgg 1140
ggaccgggga gcacctgcct gtagccccca tcagaccctg ccccaagcac catatggaaa 1200
taaagttctt tcttacatct aaaaaaaaaa aa 1232

<210> 776
<211> 708
<212> DNA
<213> Homo sapiens

<400> 776
tttcgtgtgg ctccttgcgt tcctacatcc tctcatctga gaatcagaga gcataatctt 60
cttacgggcc cgtgatttat taacgtggct taatctgaag gttctcagtc aaattctttg 120
tgatctactg attgtggggg catggcaagg tttgcttaaa ggagcttggc tggtttgggc 180
ccttgtagct gacagaaggt ggccagggag aaggcagcac actgctcgga gaatgaaggc 240
gcttctgttg ctggtcttgc cttggctcag tcctgctaac tacattgaca atgtgggcaa 300
cctgcacttc ctgtattcag aactctgtaa aggtgcctcc cactacggcc tgaccaaaga 360
taggaagagg cgctcacaag atggctgtcc agacggctgt gcgagcctca cagccacggc 420
tccctcccca gaggtttctg cagctgccac catctcctta atgacagacg agcctggcct 480
agacaaccct gcctacgtgt cctcggcaga ggacgggcag ccagcaatca gcccagtgga 540
ctctggccgg agcaaccgaa ctagggcacg gccctttgag agatccacta ttataagcag 600
atcatttaaa aaaataaatc gagctttgag tgttcttcga aggacaaaga gcgggagtgc 660
agttgccaac catgccgacc agggcaggga aaattctgaa aacaccac 708

<210> 777
<211> 446
<212> DNA
<213> Homo sapiens

<400> 777
tccaaccagt tgtaaggaga atggagagtg cagtgagagt ggagtccggg gtcctggtcg 60
gggtggtctg tctgctcctg gcatgccctg ccacagccac tgggcccgaa gttgctcagc 120
ctgaagtaga caccaccctg ggtcgtgtgc gaggccggca ggtgggcgtg aagggcacag 180
accgccttgt gaatgtcttt ctgggcattc catttgccca gccgccactg ggccctgacc 240
ggttctcagc cccacaccca gcacagccct gggagggtgt gcgggatgcc agcactgcgc 300
cccaatgtg cctacaagac gtggagagca tgaacagcag cagatttgtc ctcaacggaa 360
aacagcagat cttctccgtt tcagaggact gcctggtcct caacgtctat agcccagctg 420
aggtccccgc agggtccggt aggccg 446

<210> 778
<211> 416
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(416)
<223> n = a,t,c or g

<400> 778
ccgagcactg ggacttcaac gccaccatct ccaagactcg gtttggggtg aaagatggcg 60
ctgactgggt acagctggct gctcctcagt gccacattcc tgaatgtggg ggccgagatc 120
tctatcaccc tggagcctgc ccagccgagc gaaggggaca acgtcacgct ggtcgtccat 180
gggctttcgg gggaactgct cgcctacagc tggtatgcgg ggcccacact cagcgtgtca 240
tacctggtgg ccagctacat cgtgagcaca ggcgatgaga ctcctggccc ggcccacacg 300
gngcgggagg ctgtgcgccc cgatggcagc ctggacatcc agggcatcct gccccggcac 360
tcaagcacct acatcctgca gaccttcaac aggcagttgc agaccgaggt gggctn 416

<210> 779
<211> 382
<212> DNA
<213> Homo sapiens

<400> 779
ctttttcctg atttcagaga aacttttctt gattcatgga atcagtatct tctaagaaat 60
gagttggttg gctaatggag tttgtctata tgagtacttg tttttcagat gtggctttct 120
aattttgcaa ccttgttctt ttgatgctag tttaacggat gaagagtccc ggaaaaattg 180
ggaagaattt ggaaatccag atgggcctca aggtgtggta aatgatgatt ttaaaatatt 240
ggcgatatgg tatatattat aaaaatgtta accagattaa aggaataata ttattttctt 300
actaaactta tactcacatg gagtttaaca tagataaatt gagctctcat taatttttgc 360
tttatttttc tttctaaaga cg 382

<210> 780
<211> 437
<212> DNA
<213> Homo sapiens

<400> 780
gtggacttcg tcattattgc tgtggtttga gctcagcatg gctgtagtca tccgtttact 60
ggggcttcct tttattgcgg ggcctgtgga tattcgtcac ttcttcacgg gattgactat 120
tcctgatgga ggagtgcata taattggagg ggaaattggg gaggctttta ttatttttgc 180
aacagatgaa gatgcaagac gtgccataag tcgttcagga gggtttatca aggattcatc 240
tgtagagctc tttcttagta gcaaggcaga aatgcagaag actatagaaa tgaaaagaac 300
tgatcgtgta ggaagagggc gtccaggatc tgggacatca ggggttgaca gcctgtctaa 360
ttttattgag tctgttaagg aagaagcaag taattctgga tatggctctt caattaatca 420
agatgctggg tttcatg 437

<210> 781
<211> 476
<212> DNA
<213> Homo sapiens

<400> 781
ggccttggcc cagcagggac cccagggcct tgggggactg tgtgagctgg aaacgtggct 60
ggccagatgg gcagcaccat ggagccccct gggggtgcgt acctgcacct gggcgccgtg 120
acatcccctg tgggcacagc ccgcgtgctg cagctggcct ttggctgcac taccttcagc 180
ctggtggctc accggggtgg ctttgcgggc gtccagggca ccttctgcat ggccgcctgg 240
ggcttctgct tcgccgtctc tgcgctggtg gtggcctgtg agttcacacg gctccacggc 300
tgcctgcggc tctcctgggg caacttcacc gccgccttcg ccatgctggc caccctgcta 360
tgcgcgacgg ctgcggtcct gtatccgctg tactttgccc ggcgggagtg tccccccgag 420
cccgccggct gtgctgccag ggacttccgc ctggcagcca gtgtcttcgc cgggct 476

<210> 782
<211> 753
<212> DNA
<213> Homo sapiens

<400> 782
ctcccaaagt gccaggatta caggcgtgag ccaccacgcc cagcctaggt tttaagcctc 60
acatgtatta ggtatttata ctaatgctct ccctcccctt gccctccacc cactgtaaaa 120
ataattttta tactcttctg catttgctaa atttcctctc attagcaggt tataccttta 180
tgatcagaaa aaaaattaaa cactgcttct aaaaaatact catctccagc acttggagat 240
cacctacctc tacattctac ccaactgagc ccaatttagt cttctcaggg ctttgcccaa 300
gaacagttca ggaatgcatg cctctgaagg ccttcctgct cttccccttc tggccttggt 360
atctcattct cattcctgcc ctcccctacc tctccaaccc catcacttgc cagccatcct 420
gttcttcctt gttggtcatc agttaatgaa gtgtattagg tgacctgagt acttgtcagt 480
acttcccaga ggcaagaaca ttcctcgcag atcaaggtac ctttaagagc caagaagctc 540
agatttggag gcgggagagc tgtactgcat cccctcaaat gttagcagtg ccaagaaatg 600
agacgctagt ctagggggca ccacaagcag aaaggggctg tttcaaggag tcgtccgccc 660
atgggagtct cctcttctat tattcacctt gctccaagga tatcttttct tttacgtatg 720
aaaattttgt aattgttcaa ctataacacc atg 753

<210> 783
<211> 769
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(769)
<223> n = a,t,c or g

<400> 783
tttcgtagct gatggaagat gagccccaac ttctaaaaat gtatcactac cgggattgag 60
atacaaacag catttaggaa ggtctcatct gagtagcagc ttcctgccct ccttcttgga 120
gataagtcgg gcttttggtg agacagactt tcccaaccct ctgccccgcc ggtgcccatg 180
cttctgtggc tgctgctgct gatcctgact cctggaagag aacaatcagg ggtggcccca 240
aaagctgtac ttctcctcga tcctccatgg tccacagcct tcaaaggaga aaaagtggct 300
ctcatatgca gcagcatatc acattcccta gcccagggag acacatattg gtatcacgat 360
gagaagttgt tgaaaataaa acatgacaag atccaaatta cagagcctgg aaattaccaa 420
tgtaagaccc gaggatcctc cctcagtgat gccgtgcatg tggaattttc acctgactgg 480
ctgatcctgc aggctttaca tcctgttttt gaaggagaca atgtcattct gagatgtcag 540
gggaaagaca acaaaaacac tcatcacaag gtttactaca aggatggaaa acagntttct 600
aatagttata atttagagaa gaatacagtg gattcagtct cccgggataa tagcccatat 660
tattgtgctg ggtaaaagag agtttacata cttgggattg gagaacttta aaacccccaa 720

ttatccaagt ttacgggaag gggcctatac tccggagtac cagggggg 769

<210> 784
<211> 979
<212> DNA
<213> Homo sapiens

<400> 784
cagaggctcg ggaaggggcg tggatccccg gaggcggtcc ccgggttgca gtgagggaag 60
tgggccggga ggagagatgg gcggtgaaga ggcccggccc tgccagggag gcgggcggat 120
ccgtggcagt gaccagaagg ggccggaagg gggtggccgc cggccgggcc ccgccctggg 180
gccgcctccc cgcgggttcc gttggctgtg gcggcagctg acgcttgtgg cggcggtggc 240
ttcggggtgg gcgtaagatg gcgacagcag cgcagggacc cctaagcttg ctgtggggct 300
ggctgtggag cgagcgcttc tggctacccg agaacgtgag ctgggctgat ctggaggggc 360
cggccgacgg ctacggttac cccgcggcc ggcacatcct ctcggtgttc ccgctggcgg 420
cgggcatctt cttcgtgagg ctgctcttcg agcgatttat tgccaaaccc tgtgcactcc 480
gtattggcat cgaggacagt ggtccttatc aggcccaacc caatgccatc cttgaaaagg 540
tgttcatatc tattaccaag tatcctgata agaaaaggct ggagggcctg tcaaagcagc 600
tggattggaa tgtccgaaaa atccaatgct ggtttcgcca tcggaggaat caggacaagc 660
ccccaacgct tactaaattc tgtgaaagca tgtaagtacg caaggaggga gggagggaat 720
aaggaagacg gtgggataca actggactga agtttctgtt ttgaacatca cttctgttgt 780
taggacaaca gttaatggat atagagaact aactcagcct attataggta ggaaagaagg 840
gaactggaac actgattccc ttaagtttct tgggcatgtt gccactaagc taggtgtggt 900
tctattttgt tccctttcc taaatagatt gggagtaaat ccttataact gtacttatgt 960
aagtagatgt actaacaca 979

<210> 785
<211> 550
<212> DNA
<213> Homo sapiens

<400> 785
ctttcgtgga agaaggaaga agagggtaga ggaggagagg gaggaggagg agggaggtgg 60
cggcgccgtg gcggaggagc aggagcagga gggggatgga gaggagaagg ctcctgggtg 120
gcatggcgct cctgctcctc caggcgctgc ccagcccctt gtcagccagg gctgaacccc 180
cgcaggataa ggaagcctgt gtgggtacca acaatcaaag ctacatctgt gacacaggac 240
actgctgtgg acagtctcag tgctgcaact actactatga actctggtgg ttctggctgg 300
tgtggaccat catcatcatc ctgagctgct gctgtgtttg ccaccaccgc cgagccaagc 360
accgccttca ggcccagcag cggcaacatg aaatcaacct gatcgcttac cgagaagccc 420
acaattactc agcgctgcca ttttatttca ggtttttgcc aaactattta ctacctcctt 480
atgaggaagt ggtgaaccga cctccaactc ctcccccacc atacagtgcc ttccagctac 540
agcagcaacg 550

<210> 786
<211> 932
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(932)

<223> n = a,t,c or g

<400> 786
tttcgtcccg taccgccagg cgatcgcgct gatggcggcg ctggcagcag cggccaagaa 60
ggtgtggagc gcgcggcggc tgctggtgct gctgttcacg ccgctcgcgc tgctgccggt 120
ggtcttcgcc ctcccgccca aggaaggccg ctgcttgttt gtcatcctgc tcatggcggt 180
gtactggtgc acggaggccc tgccgctctc agtgacggcg ctgctgccca tcgtcctctt 240
ccccttcatg ggcatcttgc cctccaacaa ggtctgcccc cagtacttcc tcgacaccaa 300
cttcctcttc ctcagtgggc tgatcatggc cagcgccatt gaggagtgga acctgcaccg 360
gcgaatcgcc ctcaagatcc tgatgcttgt tggagtccag ccggccaggc tcatcctggg 420
gatgatggtg accacctcgt tcttgtccat gtggctgagc aacaccgcct ccactgccat 480
gatgcttccc attgccaatg ccatcctgaa aagtctcttt ggccagaagg aggttcgaaa 540
ggacccccag ccaggagagt gaagagaaca cagggaatag aaccccaata cctntcctct 600
ctgaggaaag gctgaaactt caagctcccc ttgtgataag acttggtcag ataactgagt 660
ctggtcaatg gaatatgagt ggaaatgatg tgtgcaactt ccgggttctg tccttcctgc 720
cgggtggaat gtgaatatga tggcacctgg gacccaaaga caggagccac atcttgagag 780
atagatggca gatctgcccc tgtggctttg gatcatttac ctcagtgaac acaacaagca 840
ttatccatga aaccataggt tttgtgtgct agttctagtt tttaaaatat gaattaaatt 900
aaatacgtat ctgttaaaac ttaaaaaaaa aa 932

<210> 787
<211> 514
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(514)
<223> n = a,t,c or g

<400> 787
tttcgtctgg agcaggcggg aaagcgctgg agagaagggg gcacctggat aaccacccat 60
cttgaaggag acctccctgc cctgcctctg ttgtccccca gagcactgcc tgatcatcct 120
ctgttcccca tcctcccagc ccttcctgct gtacctgtgg ggagctgatc tcctcagtcc 180
ccctgctttt ccccggtctg ccatcaccac cccaccacca tgcacccccct tcctggctac 240
tggtcctgtt actgtctact cctgctattc tccttgggag tccaggggtc cctgggggct 300
cccagcgctg ccccagagca agtccatctg tcttacccag gtgagccagg ctccatgact 360
gtaacttgga ccacatgggt cccaacccgc tctgaagtgc aattcgggtt gcagccgtcg 420
gggcccctgc ccctccgcgc ccagggcacc ttcgtcccct ttgtggacgg nggcattctc 480
cggcggaagc tctacataca ccgagtcacg cttc 514

<210> 788
<211> 469
<212> DNA
<213> Homo sapiens

<400> 788
cccgtaattc tcgggtcgac gatttcgtgg cgcggaggag ctctgtccgg aatcacatag 60
ataccatcgt ggaaacagca gcgcaggtca cggcgccgcg ggccctgcac cagacgctgg 120
gctctagaga ttatttctct ttattcagaa gcatacagtt gtttgctgat tgcaagaaga 180
tgtttctgtg gctgtttctg attttgtcag ccctgatttc ttcgacaaat gcagattctg 240
acatatcggt ggaaatttgc aatgtgtgtt cctgcgtgtc agttgagaat gtgctctatg 300

tcaactgtga gaaggtttca gtctacagac caaatcagct gaaaccacct tggtctaatt 360
tttatcacct caatttccaa aataattttt taaatattct gtatccaaat acattcttga 420
atttttcaca tgcagtctcc ctgcatctgg ggaataataa actgcagat 469

<210> 789
<211> 525
<212> DNA
<213> Homo sapiens

<400> 789
ggacttctcg ggtcgacgat ttcgtgcccc ctcggatgaa tgggaccgaa gctgactgcg 60
aactacagct tcttggcagc gtcggtgttg gccgcgggag aaggggagac cgcggcggcc 120
cccagtgaga gcggctttcc aggacggtgc gatgtgctgc gcagcgaaga ggcaggaggc 180
cggcttcctg ggtagcggt acaggcgggc gcttactctg tgcgcttgct tccccaaccc 240
tgcaccggcc atgcgcccgg ccttggcggt gggcctggtg ttcgcaggct gctgcagtaa 300
cgtgatcttc ctagagctcc tggcccggaa gcatccagga tgtgggaaca ttgtgacatt 360
tgcacaattt ttatttattg ctgtggaagg cttcctcttt gaagctgatt tgggaaggaa 420
gccaccagct atcccaataa ggtactatgc cataatggtg accatgttct tcaccgtgag 480
cgtggtgaac aactatgccc tgaatctcaa cattgccatg cccct 525

<210> 790
<211> 377
<212> DNA
<213> Homo sapiens

<400> 790
ggaccccatg tcaaaaatac aaaagatatg ttgaagtccc aactcctgat aactcaaatg 60
tgactgtgtt gggaacatct ggagtcctta cagagataat caagttaaaa tgaggtcatt 120
agtgtgggtc ctaatccaac aactgacgcc cttatacaaa ggagaaacct ggacacagac 180
atgcacagaa gaccatgtga ccatgaaggc agagatcaga gtgatgcttc tagaagccag 240
ggaagattgc cagttaatga ccaaaagaag ccaggagaca ggcctgcaac ggattctgcc 300
tgaaggctcc cagaaggaac caaccctgac aacaccttga tcttggactt ccaacctcca 360
gagctgggag gcgacac 377

<210> 791
<211> 637
<212> DNA
<213> Homo sapiens

<400> 791
ataaacttgt tttaaattgg cttattgctg gtctctcaag gcttcctatt tttgtttgct 60
ttagtctctc taaaatttca gggaaaaact atgagtctca aaatgcttat aagcaggaac 120
aagctgattt tactactagg aatagtcttt tttgaacgag gtaaatctgc aactctttcg 180
ctccccaaag ctcccagttg tgggcagagt ctggttaagg tacagccttg gaattatttt 240
aacattttca gtcgcattct tggaggaagc caagtggaga agggttccta tccctggcag 300
gtatctctga aacaaaggca gaagcatatt tgtggaggaa gcatcgtctc accacagtgg 360
gtgatcacgg cggctcactg cattgcaaac agaaacattg tgtctacttt gaatgttact 420
gctggagagt atgacttaag ccagacagac ccaggagagc aaactctcac tattgaaact 480
gtcatcatac atccacattt ctccaccaag aaaccaatgg actatgatat tgccctttttg 540
aagatggctg gagccttcca atttggccac tttgtggggc ccatatgtct tccagagctg 600

cgggagcaat ttgaggctgg ttttatttgt acaactg 637

<210> 792
<211> 881
<212> DNA
<213> Homo sapiens

<400> 792
agggtatata gagaaaagga tctcatgtat tgctctactt ttttcttcta gatacctgtt 60
aacttcttac gctttcatga tacatttatc tagttctgtt attcaagtta aagtattata 120
cagttaagtc tatggcagag tcagattctt ttatgtgtct aactgttgcg aagtatagac 180
ttcttatatc ttatatggtg accattaaca tataacgagc atgctagcat attgttgtct 240
ttgagagcac cgtatcaact ttttgatctg tagaatgaca gaagccacat tcgatactct 300
gcgactctgg ttaataatcc tgctgtgtgc tttgcggttg gccatgatgc gtagtcacct 360
gcaagcttat ttaaatttag cccaaaaatg tgtggatcag atgaagaaag aagcggggcg 420
aataagcacg gttgagctac agaaaatggt ggctcgagtc ttttattatc tttgtgtcat 480
tgcactgcag tatgtggcgc ctctggtaat gctgcttcac acaactctgc ttttgaaaac 540
actaggtaat cattcctggg gtatttatcc agaatctatc tctaccttac cagtggataa 600
tagtctactg tccaattctg tttactctga attaccatca gctgaaggga aaatgaagca 660
taatgcaagg caaggtccag ccgttccacc cggcatgcaa gcttatggag cagccccctt 720
tgaagatctc cagctagact tcacagagat gccaaagtgt ggagatctta ttcctagatt 780
tggactgccc ttacggatcg gctcagataa tgggctggcg tttgtggctg acttggtaca 840
gaagacggca aagtggaaag gaccccagat tgtcgttctg c 881

<210> 793
<211> 622
<212> DNA
<213> Homo sapiens

<400> 793
atgagttttc cgcttcatca tctgcttctg ttttctccat cttagtttgc ccaaagcttg 60
ctggccgctg tgtagggctg gtgagtggct ggggctgtct gagccatgaa caacttcagg 120
gccaccatcc tcttctgggc agcggcagca tgggctaaat caggcaagcc ttcgggagag 180
atggacgaag ttggagttca aaaatgcaag aatgccttga aactacctgt cctggaagtc 240
ctacctggag gggctggga caatctgcgg aatgtggaca tgggacgagt tatggaattg 300
acttactcca actgcaggac aacagaggat ggacagtata tcatccctga tgaaatcttc 360
accattcccc agaaacagag caacctggag atgaactcag aaatcctgga atcctgggca 420
aattaccaga gtagcacctc ctactccatc aacacagaac tctctctttt ttccaaagtc 480
aatggcaagt tttccactga gttccagagg atgaagaccc tccaagtgaa ggaccaagct 540
ataactaccc gagttcaggt aagaaacctc gtctacacag tcaaaatcaa cccaacttta 600
gagctaagct caggttttag ga 622

<210> 794
<211> 1177
<212> DNA
<213> Homo sapiens

<400> 794
tttcgtcttg gcatagcctg ctagaggggt gcagctgcat ctcctgcctc tggcattccc 60
gcagcagatg cacatggccc tgcactgaga agcgcccagc tcactgcacc tgcactcagg 120

aattgtagga ctccctctag gagttgggca catgtcgttg gtgggagccc tgtccctgcc 180
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<212> DNA
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<212> DNA
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<211> 423
<212> DNA
<213> Homo sapiens

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<212> DNA
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<212> DNA
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<212> DNA
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<212> DNA
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<212> DNA
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<212> DNA
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atatgatcct ccggccttca attgaagaag ttagttggca tccatggcta gcaagcactt 540
gataaaagca atggcaagtg ctctccaata aagtaggggg agaaagcaaa cccaaaaaaa 600
aaaaa 605

<210> 815
<211> 910

<212> DNA
<213> Homo sapiens

<400> 815
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gattttgaaa gacaaaacag tctgaaaggg catcttctta ttccttttaa aatgaaaaga 180
ttagtttcca gagagatttg ctgacttgct taggccacac aaccagaagc ctgctggtgt 240
tctgtctggg gatttttcc cattcaaatc tcataagtga agctccttct ccaaagaata 300
atgtttctaa aatctagggt atgggcatct ggggtatgtc ctatatgcag gcaaatgcca 360
taaatagcat tcattcagag gctcaattac atcaaaacag aaggatttaa agagtccctg 420
atgttctctt tcactcttgc ttttgtctcc tttgccttgc tccacatgtt ccttccctca 480
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ggatgccccc tggggaagaa tgccagagac atcacaagat tgccctggca cctcccaact 660
tctgcccttc tcttttaact ctgttcacca agcttgtaaa taataataat aataagctta 720
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ggctgggtgt ggtggctcac ccctgtaatc ccagcacttt tgggaggcca aggcaggcag 840
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accaaaaccc 910

<210> 816
<211> 1892
<212> DNA
<213> Homo sapiens

<400> 816
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gcctgtgctc tgctctacag atgataggag ggatggacag tggagagaag ctgagccttg 180
tgaccaagac cccccagcatg atggggaatg gaaagttgga agaagtagga ctacaaggga 240
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tttccatcca gctccccatg tccactgaca gccacaccca ggcttcaggt ggaggtgagg 360
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ggctaccagc acaaggatgg aggctggggg ccatgtgcag tagggccaga aaagtgttca 660
gtggaattgt gggtaggagg ctgagatgct gctgggccct gtccccacca aagatggaag 720
aactgaggtg gaggcaactg gccacttgcc taggagagaa ctcaggcacc aagttaaaaa 780
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ttgggatcca tcttctgagg gtgaagctcg agtgagcggg gcaggcagct gtcaacaggg 1860
agctctttct tcatctcagg gggacagcta gg 1892

<210> 817
<211> 687
<212> DNA
<213> Homo sapiens

<400> 817
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gtctgtggtc cgcaaggccc cagtggagcc cttgggttcc cgcagaaccg actgggtctc 180
cagtagtctc tgaggagccg ctcgaccttc tcccgaccct ggatctgagg caggagatgc 240
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tatccctggc aggagacgtg ctggtcagca tgtacaggga ggtctgttcc atccgcttcc 360
tgttcacggc tgtgtcgctg ctgagcctct ttctgtcagc attctggctg gggcttctgt 420
acctggtctc tcctttggag aatgaaccta aggagatgct gactctaagt gagtaccacg 480
agcgcgcgcg ctcccagggg cagcagctgc tgcaatttca ggccgagctg gataaactcc 540
acaaggaggc gtcccttgtt tgcggctgcc cctccctgag agaggtgcca agctccgccg 600
tctcaaggct ggaaccacct tctatcgcgc aaccccttct ctctcgtctc cagctttatt 660
tatccgaccc ctcatcatat ctcgtcc 687

<210> 818
<211> 372
<212> DNA
<213> Homo sapiens

<400> 818
cgctgagatg tatacctggc aggtgggcaa taattagacg agaataaaag acacttgcat 60
cattgccaga agtgtgtaaa cttctttttg cttcttttcc tggaggaata gaagagagag 120
acagtcccca atgtgtggag aatttctctt catcagcata tatagctgtg atatgtaaag 180
gagcatcaaa ggtctcataa gtttcatcgt cgttaaaata tacaaaaagg gctgtcaatg 240
cttgagacat cagaattaac atacactctc tcttcgtaac agtccacggt tgctacctat 300
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gtgccctgta tt 372

<210> 819
<211> 445
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(445)
<223> n = a,t,c or g

<400> 819
gtcagcttcg gaanttccgg gnagactcac cgcgacggga cttggtgggt tcttggtctc 60

actgagttct agtttgaagc tgtttaccct cgcagctctc tgactggcac ccctgcctgc 120
ctgcccggcc ctgcacaaca tgcagccctc cggcctcgag ggtcccggca cgtttggtcg 180
gtggcctctg ctgagtctgc tgctcctgct gctgctgctc cagcctgtaa cctgtgccta 240
caccacgcca ggcccccca gagccctcac cacgctgggc gcccccagag cccacaccat 300
gccgggcacc tacgctccct cgaccacact cagtagtccc agcacccaag gcctgcaaga 360
gcaggcacgg gccctgatgc gggacttccc gctcgtggac ggccacaacg acctgcccct 420
ggttctaagg caggtttacc acaat 445

<210> 820
<211> 425
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(425)
<223> n = a,t,c or g

<400> 820
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tcagtctact ggtgccggga agactggcca aatcaggaaa tgaggaagat ctacaccact 180
gtgctgtttg ccaacatcta cctggctccc ctctccctca ttgtcatcat gtatggaagg 240
attggaattt cactcttcag ggctgcagtt cctcacacag gcaggaagaa ccaagagcag 300
tggcacgtgg tgtccaggaa gaagcagaag atcattaaga tgctcctgat tgtggccctg 360
ctttttattc tctcatggct gcccctgtgg actctaatga tgctctcaga ctacgctaaa 420
ccgan 425

<210> 821
<211> 706
<212> DNA
<213> Homo sapiens

<400> 821
ggattgagtg agcccaggag gtctaggctg cagtgagctg tgatcacacc tctgcactcc 60
agcctgggtg acagagaaag atcctgtccc aaataactaa gtaaataaga tggcctgaac 120
acttgcaccc ctaaacctgc tctgtcccag tgtgcccccct cgaaaatggt ctgggttctg 180
tatgtaactg ggcctctctc ctgcagagat cctctcagac tccgaggagg accgggtatc 240
ttctaatacc aacagctatg actacggtga tgagtaccgg ccgctgttct tctaccagga 300
gaccacggct cagatcctgg tccgggccct caatcccctg gattacatga agtggagaag 360
gaaatcagca tactggaaag ccctcaaggt gttcaagctg cctgtggagt tcctgctgct 420
cctcacagtc cccgtcgtgg acccggacaa ggatgaccag aactggaaac ggcccctcaa 480
ctgtctgcat ctggttatca gcccccctggt tgtggtcctg accctgcagt cggggaccta 540
tggtgtctat gagataggcg gcctcgttcc cgtctgggtc gtggtggtga tcgcaggcac 600
agccttggct tcagtgacct tttttgccac atctgacagc cagcccccca ggcttcactg 660
gctctttgct ttcctgggct ttctgaccag cgccctgtgg atcaac 706

<210> 822
<211> 357
<212> DNA
<213> Homo sapiens

<400> 822
cggacgcggg ggcggacgct gggccttgct ccttcctcat tgggatcatc agtcagtgaa 60
ttggaaggaa atgggccatg ctggtcaaca atgttctggc ggggctgggg ggcaccctta 120
tgggcctggc caacgttgct gactcctata aaatgctcat ccttgtacga ttcctttttt 180
tcgcctactg acgcgctggg cttggagtcc cttctgggaa ctgccagcct gtggccactg 240
ctcctgagcc tcacagagct acctgccctc ctgcaaatgt gactgctgac cttctgttcc 300
gaaagacccc gctacctcta cgtaatacat aatttcgagg gacctgccag aattagt 357

<210> 823
<211> 402
<212> DNA
<213> Homo sapiens

<400> 823
cgggtcgacc cacgcgtccg atccgagcta atcagtcaat acaagtcaca tgggtttatg 60
gatatgctcc atgacaagtg gtacagggtg gttccctgtg gcaagagaag ttttgctgtc 120
acggagactt tgcaaatggg catcaaacac ttctctgggc tctttgtgct gctgtgcatt 180
ggatttggtc tgtccatttt gaccaccatt ggtgagcaca tagtatacag gctgctgcta 240
ccacgaatca aaaacaaatc caagctgcaa tactggctcc acaccagcca gagattacac 300
agagcaataa atacatcatt tatagaggaa aagcagcagc atttcaagac caaacgtgtg 360
gaaaagaggt ctaatgtggg accccgtcag cttaccgtat gg 402

<210> 824
<211> 348
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(348)
<223> n = a,t,c or g

<400> 824
ggcacgagag aggctatgag tacaatcagg acctgatccg caagggtcag gccaacaagg 60
tgaagaaact ctccatcgtt gtctccctgg ggacagggag gnccccacaa gtgcctgtga 120
cctgtgtgga tgtgatatct agcagcatca ccggttactt acgttcgtat gtttttggtg 180
tcaattatat gtgttactct cttctttcct attgtagctc tcttcgatct ttacgccact 240
ctcgctcact gtgtgtacgc gttttctact gactctcttc tgcctgctgt gatgcttact 300
gcgcttcctc gtagtctctt cttttcgtcg tcgttgattt tatcatcg 348

<210> 825
<211> 347
<212> DNA
<213> Homo sapiens

<400> 825
ggcacgagcc ggtgggtcta cagcggaagg gagggagcga aggtaggagg cagggcttgc 60
ctcactggcc accctcccaa ccccaagagc ccagccccat ggtccccgcc gccggcgcgc 120

tgctgtgggt cctgctgctg aatctgggtc cccgggcggc gggggcccaa ggcctgaccc 180
agactccgac cgaaatgcag cgggtcatgt tacgctttgg ctgctctgtc atctgttgct 240
attgtatctc agttcgtact ggtcggtccc gggaaactgg atagtctgga gcagtcgatt 300
atgtactcgg catctctttg agttgatgga gtatcgatgt gtggttg 347

<210> 826
<211> 649
<212> DNA
<213> Homo sapiens

<400> 826
ggcacgagca cctctttgag ttccccagga agaacccatt tgcactaaaa acattattga 60
gcaaagtaga tgttactaaa gattttgaag ggatgtgtag tctttcatca cctaccttgc 120
agcactcaag tttacaaacc ctcattgggc atgtgggggt tcctgagtcc cctgtgggaa 180
gtggtttttt gccatacacc ttgtttcaga gctcagcctc agttagacag ggcaggctcc 240
agtttcctca tctacccctc tccccacagc acctctaatt aaccagccct tttcttacca 300
ctgagaaatt gaactctact aaataattac agccttgtgc cacataatga cgttttggtt 360
aacaggggac cgtgtgtata atggtggtct cataagaata taataccatg ggtttactat 420
acttttctat atttagaaat gtttagattt aagttagata tggttagatt taaaatacgt 480
aacacaggct ggacccggta gctcatgcct ggaatcccag cactttggga agccgagttg 540
ggtggatcac ctgagggcag gagtttggaa ccaccctggc caacttgggg gaccccattc 600
ttctaaaaaa cacacattac ctgggggggg gcgagccctt tatcctacc 649

<210> 827
<211> 791
<212> DNA
<213> Homo sapiens

<400> 827
ggcacgagac tgttcactac ctcctctacc tggccatggc cggcgccatc tgcagaagga 60
agagataccg gaattttgga ctctactggc tgggttcctt cgccatgagc atcctggtgt 120
tccttacagg aaacattctt ggcaaataca gctccgagat caggcctgcc ttcttcctca 180
ccatccccta cctgctggtg ccatgctggg ctggcatgaa ggtcttcagc cagccccggg 240
cgctaacccg ctgcaccgcc aacatggtgc aagaggaaca aagaaaggga ctcctgcagc 300
gtccggctga cctggccctt gtcatatatc tcatccttgc tggcttcttc actctgttcc 360
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agccatacct gcgggaccct gtggcctacc ctaaggtgca gatgctgatg tacatgtttt 480
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gggcttccat gcacctgcgc acacccttca cctaccgtgt gcctgaggac acctggggct 660
gcttcttcgt gtgcaatctg ctgtatgcgc tgggccccca cctgctggcc taccgttgcc 720
ttcagtggcc cgcattcttc caccagccac caccctccga ccccctagcc ctccacaaga 780
agcagcattg a 791

<210> 828
<211> 348
<212> DNA
<213> Homo sapiens

<400> 828

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aaaggaccat ttgcagaatt cagaaaaatt cttcagtttc ttttggctta ttccatgtcc     60
tttaaaaact tgagtatgct tttgcttctg acttggccct acatccttct gggatttctg    120
ttttgtgctt ttgtagtagt taatggtgga attgttattg gcgatcggag tagtcatgaa    180
gcctgtcttc attttcctca actattctac tttttttcat ttactctctt tttttccttt    240
cctcatctcc tgtctcctag caaaattaag acttttcttt ccttagtttg gaaacgtaga    300
attctgtttt ttgtggttac cttagtctct gtgtttttag tttggaat                 348
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<210> 829
<211> 638
<212> DNA
<213> Homo sapiens

<400> 829

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cccacgcgtc cgccccaagc tggtcatgga actgatgccc atcggtctgc gggggctgat     60
gatcgcagtg atgctggcgg cgctcatgtc gtcgctgacc tccatcttca acagcagcag    120
caccctcttc actatggaca tctggaggcg gctgcgtccc cgctccggcg agcgggagct    180
cctgctggtg ggacggctgg tcatagtggc actcatcggc gtgagtgtgg cctggatccc    240
cgtcctgcag gactccaaca gcgggcaact cttcatctac atgcagtcag tgaccagctc    300
cctggcccca ccagtgactg cagtctttgt cctgggcgtc ttctggcgac gtgccaacga    360
gcagggggcc ttctggggcc tgatagcagg gctggtggtg ggggccacga ggctggtcct    420
ggaattcctg aacccagccc caccgtgcgg agagccagac acgcggccag ccgtcctggg    480
gagcatccac tacctgcact tcgctgtcgc cctctttgca ctcagtggtg ctgttgtggt    540
ggctggaagc ctgctgaccc cacccccaca gagtgtccag attgagaacc ttacctggtg    600
gaccctggct caggatgtgc ccttgggaac taaagcag                            638
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<210> 830
<211> 428
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(428)
<223> n = a,t,c or g

<400> 830

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ttcatgctgg ccaccgtggt gctgtacttc agccacctca aggagtatgt ggcttccatg    120
gtattctccc tggccttggg ctggaccaac atgctctact acacccgcgg tttccagcag    180
atgggcatct atgccgtcat gatagagaag atgatcctga gagacctgtg ccgtttcatg    240
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gggaagaatg actccctgcc gtctgagtcc acgtcgcaca ggtggcgggg tttttctnan    360
acccccctct ntcttctaca taaactgtac tccacctgcc tggaactgtc caactccacc    420
atngattg                                                             428
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<210> 831
<211> 892
<212> DNA
<213> Homo sapiens

<400> 831
cccggaagct gggaaatgac ttattaacct tcatggcctc tggtcttctg aggaagcagt 60
ctgaggagcc cgagttttga aaagggaagc aatcctccaa ggctgcgatt tccacagaaa 120
tcacatgtga gccacaggtg tcattttaaa atttctagta gcaacagaaa cgaggaataa 180
acagatggtg tttgagtcac tgaatttttg gaaggacttc aaatgtcaag cattattctc 240
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caagagcctc cccagagaaa agggccatgc agaccagcct gtgtcttctg gaactggaac 480
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caacggggcca actggggccc ttcatagaat acccccaccc tattcttttc cgaacctctc 780
tccaaggctc tgaagactgc ctccgacgtc tgtctctcgc gcccgcgcca cccgtaaacc 840
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<210> 832
<211> 312
<212> DNA
<213> Homo sapiens

<400> 832
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gcgatatgac tgccagactt atgcggtctt tgctggctgc acaacttaca tttgtatata 120
gggtggcgca tctaatgaac gttgctcaac gcataagggg aaatcgtccc attaagaatg 180
agagactact tgcattgctt ggagataatg aaaagatgaa tttgtcagat gtggaactta 240
tcccgttgcc tttagaaccc caagtgaaaa ttagaggaat aattccggaa acagctacac 300
tgtttaaaag tg 312

<210> 833
<211> 426
<212> DNA
<213> Homo sapiens

<400> 833
gccataattt ctttcttcat tggatttgga ctaagatttg gagcaaaatg gaactttgca 60
aatgcatatg ataatcatgt ttttgtggct ggaagattaa tttactgtct taacataata 120
ttttggtatg tgcgtttgct agattttcta gctgtaaatc aacaggcagg accttatgta 180
atgatgattg gaaaaatggt ggccaatatg ttctacattg tagtgattat ggctcttgta 240
ttacttagtt ttggtgttcc cagaaaggca atactttatc ctcatgaagc accatcttgg 300
actcttgcta aagatatagt ttttcaccca tactggatga tttttggtga agtttatgca 360
tacgaaattg atgtgtgtgc aaatgattct gttatccctc aaatctgtgg tccgtcgacg 420
cggccg 426

<210> 834
<211> 445
<212> DNA
<213> Homo sapiens

<400> 834
aagcgcgcta gtagcagctc tggcagaagc aacggtggct tcgagggatg gcggcggctg 60
caacaggacc tgcagcatcc cagaggaact gactaagact ttggaacaga aaccagatga 120
tgcacaatat tatcgtcaaa gagcttattg tcacattctt cttgggaatt actgtggtgc 180
agatgctaat ttcagtgact ggattaaaag gtgtcgaagc tcagaatggc tcggaatctg 240
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ccttcctgct gggccgcttc ctgcatatgt ttgtcaaggc tctgagggtg cacctcggct 360
gggagctcca ggtggaagaa aaatctgtcc tggaagtgca ccagggagag cacgtcaagc 420
agctcctgag gataccccgc cctca 445

<210> 835
<211> 487
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(487)
<223> n = a,t,c or g

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<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(498)
<223> n = a,t,c or g

<400> 839
acgtctccta atgaggactg agtgacntgc cacgaggacg aaagaaaatc acttataaga 60
tgaaccctgc tgtaagacag agatgtctct tgttttgttt tcagcagaag ctgatcctgt 120
ctcatttttt cctgctacag gttcctcagt ggtgtgctga atattgtctt tccatccact 180
accagcacgg gggcgtgata tgcacacagg tccacaagca gactgtggtc cagctcgccc 240
tgcgggtggc ggatgaaatg gatgttaaca ttggtcatga ggttggctac gtgatccctt 300
tcgagaactg ctgtaccaac gaaacaatcc tgaggttggt ttgtggggtt cagtccgctc 360
cctgctgatg attcttggct taggttctac aattctgaag gagcattatt ctggcattct 420
acctgttaag catctatgct gtgcagtagc aactggtctc tgtcatcagc cagccagcaa 480
cagttgcttt cccacact 498

<210> 840
<211> 858
<212> DNA
<213> Homo sapiens

<400> 840
ctcgacccgc ctgcaggaat tcggcacgag ccggaatccg cgcgcagccc ggatcgttta 60
aatgagagtt tgcagaagat gaaaggggag tcttgcattc agcaatttgc cctgtattta 120
atgagccagc caccttgtgt cttcccctcc tatgacatag cccttcagct caccctacaa 180
ttgccacatg aaaacttctc tcatgaaacc cacagggtgc aagttctctc ctgttgccct 240
gagtgcccac tcccaggccc tctgtatgag tgacacttca gtctgccatg gaacctggcc 300
ctgctctggc ctggctcctg ctcctgagcc tgctggcgga ttgtctgaaa gctgctcagt 360
cccgagactt cacagtgaaa gacattatct acctccatcc ttcaaccaca ccatatcctg 420
gtggatttaa atgtttcacc tgtgaaaagg cagcagacaa ttatgagtgc aaccgatggg 480
ctccagacat ctactgccct cgagagacca gatactgcta cactcagcac acaatggaag 540
tcacaggaaa cagtatctca gtcaccaaac gctgtgtccc actggaagag tgcttatcca 600
ctggctgcag agactccgag catgaaggcc acaaggtctg ggcaacagag caagtgacca 660
gtactacata gccagctgcc ttctcttcag acatctgcca gtactcatga gcagattctt 720
actccccgt gaaggctgtc ttttgattgt ctttatgctc tgtgaaaaga cgcttccttt 780
cctgtttact ctaaaagaat acacatttat accagagcat aggacaactg atataaattg 840
tgtaaacaca catgaaga 858

<210> 841
<211> 459
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(459)
<223> n = a,t,c or g

<400> 841
nagcggttnn nnnnaactga cttcctagca tttngcgngg cattcacaaa agaatatgaa 60
ggaaatgtga cttggaagat caaattgagg aatgcaatac acctttcaag cttgactgta 120
actactctag caaacctcat accctttact ctgagcctaa tatgttttct gctgttaatc 180
tgttctcttt gtaaacatct caagaagatg cggctccata gcaaaggatc tcaagatccc 240
agcaccaagg tccatataaa agctttgcaa actgtgacct ccttcctcat gttatttgcc 300
atttactttc tgtgtataat cacatcaact tggaatctta ggacacagca gagcaaactt 360
gtactcctgc tttgccaaac tgttgcaatc atgtatcctt cattccactc attcatcctg 420
attatgggaa gtaggaagct aaaacagacc tttctttca 459

<210> 842
<211> 424
<212> DNA
<213> Homo sapiens

<400> 842
tttcgtccgg aagtgcggat cccagcggcg gccgtgtagc tgagcaggcc tggggcttgg 60
ttctatgtcc ctgtggctat gtttccagtg tcctctgggt gtttccaaga gcaacaagaa 120
acgaataaat ctctgttgaa gagataccat ttgacatttt agagatggct gcatgcaaac 180
tcttaaaaca tttgaatgga ttttccctct tgttgcccag gctggagtgc aatggtgtga 240
tctcggttca ctgcaacccc ctgcctcccg ggttcaagcg attctcctgc ccagcctcc 300
tgagtagctg ggattagagg catgtgccac catgcccagc taattttgtg tttttagtag 360
agacggggtt tttccttgta ggtcaggctg gccctgaact cctgacctca ggtgatccac 420
ctgc 424

<210> 843
<211> 697
<212> DNA
<213> Homo sapiens

<400> 843
ggcacgagat ttaatgacat taaaagaaaa ccataaacaa gcctgtgcac agagttccta 60
catgaaaacc aaatgtaaac caaatattac cttcttcaac accatcatct gtttcttcct 120
gacttttctc ttctgcatct atatcgattc gctcctctgt actgttccga agaacccagc 180
acaggcggta cagctgaaca gggaccatac aaaagtgcat tagtaatagg caaatgtttg 240
caataatata atagaatggt acctttgttt atcgtctggt gtttttaaaa aatcaaacca 300
tacaggagaa tatagatcac aaagaaaagg cctcctacca cactcactca tcaaaacaca 360
ctaatcattt taaatttttt tctgttttta attctttctg ggtgctattt agaacttcaa 420
atgatatact taaaaatacc tacttctgga tttgtaattt cagcaaagtt gaagatttag 480
ctaacctaca ctatacccca gcttcactca ttgtccttaa catccaacag ttattagcca 540
catcatgatt tccttcagtt tatctaatgg ttgcttttat aactttcaaa ctatcttctt 600
aaaatctatt tctggaacca tcacatttgg ctgggatcta agtaccaatg gaattccaat 660
tgcaattaag aacccttaac ccacttcctt tttctta 697

<210> 844
<211> 698
<212> DNA
<213> Homo sapiens

<400> 844
tttcgtgtca cggctgtagt tagggtcaag gtggtagtta ggatcatggc tgtagttagg 60
gtcatggtgg tagttagggt cacggctgta gttagggtca tggtggtagt tagggtcgtg 120
gtggttaggg tcatggtggt agttaggatc acggctgtac ttagggtcat ggtggtagtt 180
aggatcatgg ctgtaattag ggtcatggtg gtagttaggg tcacggctat agttggggtc 240
atggtggtaa ttagggtcac agcgatagtt agcatcatgg tggtagttag ggtcatggtg 300
gtagttaggg tcatggtggt agctaggccc atggtggtag ttagggtcat ggctgtagtt 360
agagtcatgg cggatagtgc gctcagggct atatgttcgt cgtcgctgaa cgttacgttt 420
tcgcttgaat agtcaagccc tgcctcgtct tttctttttt tcactccaca aagaatcgtc 480
cttactcgaa tgcttttttc ccgtgcttaa ggtggcacac catccctggc caacatctct 540

```
tttggttatg taactcttag tcgtccttgc atacacctcc ccccccgcgg ggtgttaccc    600
cccgagttgc gagagcaatt ctaaactagc cgttttagcg taccccccttc actgaacctg   660
ttttcccgac aacctctctt cacggcctgg ggagggcg                            698
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<210> 845
<211> 627
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(627)
<223> n = a,t,c or g

<400> 845

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tttcgtgcag agatgagctg ttttggactt ctcctggggg gcttaactcc aagggttctg     60
agtacagagg aacagctgcc ccctgggttc ccttccatcg acatggggcc tcagctgaag    120
gtggtggaga aggcacgcac agccaccatg ctatgtgccg caggcggaaa tccagaccct    180
gagatttctt ggttcaagga cttccttcct gtagaccctg ccacgagcaa cggccgcatc    240
aagcagctgc gttcaggtga gcagagggca ggggtcaaag ggccatgcag acctcagaac    300
aagcgtcttg tcagatccca gcacagccta ctcccttggg cctgggcacc tccagggctg    360
agcggagggt acctggtggg gtgggctggg tcttactgca ggtgtgcctg gctcagggaa    420
gagagctcgt ggttggctgt gccgttacct tcttcggatt gtcagactcc agactttggg    480
ccagttctgc ccctcccagc acatgtgatg tgccagtgtg gtggactctt caagggagct    540
ctatggatgt taaccctcct ccttccctgt ancctggcct gagacaggag aatggatgat    600
gcctttaatc agagctggtt tgactta                                        627
```

<210> 846
<211> 635
<212> DNA
<213> Homo sapiens

<400> 846

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tttcgtttca agtgctcttg cccaccaggc actcggggcc tactctgtga agagaacatt     60
gatgactgtg cccggggtcc ccattgcctt aatggtggtc agtgcatgga taggattgga    120
ggctacagtt gtcgctgctt gcctggcttt gctggggagc gttgtgaggg agacatcaac    180
gagtgcctct ccaacccctg cagctctgag ggcagcctgg actgtataca gctcaccaat    240
gactacctgt gtgtttgccg tagtgccttt actggccggc actgtgaaac cttcgtcgat    300
gtgtgtcccc agatgccctg cctgaatgga gggacttgtg ctgtggccag taacatgcct    360
gatggtttca tttgccgttg tcccccggga ttttccgggg caaggtgcca gagcagctgt    420
ggacaagtga aatgtaggaa gggggagcag tgtgtgcaca ccgcctctgg accccgctgc    480
ttctgcccca gtccccggga ctgcgagtca ggctgtgcca gtagcccctg ccagcacggg    540
ggcagctgcc accctcagcg ccagcctcct tattactcct gccagtgtgc cccaccattc    600
tcgggtagcc gctgtgaact ctcaactcac ccacc                               635
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<210> 847
<211> 1100
<212> DNA
<213> Homo sapiens

<400> 847
gcaatttggt gctgctcctg cccctgggtg ctgagcaggc ctggtgctgt ctcccgtgga 60
cctggtcagg ccttacctct tgatgacaaa ctggatgctg ttgctggcct ccagaatctt 120
ccagagcttg gcgatcccga agcagttggg tctgcggagg gagatgcctt cgggcagccc 180
caccacaaac agctcctccg ggtgcatcag aaacttggag tacagcacct tgatgggttc 240
cgagatgcca atggccttgg ctgcagagac atggctgctg taagtccagc cggtgccaca 300
gggccaggaa tctcaacccc tgtgtcccat gcctgtgtag agggcaaagc tgcctgtcct 360
tttgagggcc ttcctgggag gtgagccagg cgtgagccac cttgccctgc ctatattact 420
tatttgctta tgcttatctc tccacacgag gatgtgtacc ccaggaggtg gggacatctg 480
tttggtccac tgcttttccc ccagcccctt gcacaggacc tattacacag taggtgctca 540
ataaatattt gttgaggcgg ggtgcattgg ctcacgcctg taatcccagc tctttgtgag 600
gccagggtag gaggatcatt tgaggtcagg agtttgagac ctgggggccc atcatgggga 660
agccccgtct ctactcaaaa cgcccaaaca attggcccag cgttgtgggt ggcctcctct 720
ggtcgccacc tacttcagag gtctgagcag cataactggt ttcgccccat atgccgtagg 780
tatctaggac tcttagatcg cacaattgac ttccggcctt gccgaatgga agctgtctcc 840
ctttctataa atctacgaac ttgggcgatt atgagtccca tgctgctctt agacttccgg 900
acgtcgtgga tgcccttaat cggcttcctc ggtctttcac gctcaaggcc ttagcccttc 960
tgtatctcct cttgtaccta catggcgccc gtacgtgttg ccttcgatgc gcacgactcg 1020
cccgaataga ggacgtctct ccttgctctc tcgactcttc gaagactgtc aaacccgtcg 1080
caatactcgc tgttgtatcc 1100

<210> 848
<211> 685
<212> DNA
<213> Homo sapiens

<400> 848
caacaacaaa ccagaagagg gcttaaagga acttacaaaa gctgcacaca ggaatggaat 60
gaagaatgct gaagacatcc taaccatgga ggttttgaaa tccaccatga agcaagaact 120
ggaggcagca cagaaaaagc attctctttg tgaattgctc cgcataccca acatatgtaa 180
aagaatctgt ttcctgtcct ttgtgagatt tgcaagtacc atcccttttt ggggccttac 240
tttgcacctc cagcatctgg gaaacaatgt tttcctgttg cagactctct ttggtgcagt 300
caccctcctg gccaattgtg ttgcaccttg ggcactgaat cacatgagcc gtcgactaag 360
ccagatgctt ctcatgttcc tactggcaac ctgccttctg gccatcatat ttgtgcctca 420
agaaatgcag accctgcgtg tggttttggc aaccctgggt gtgggagctg cttctcttgg 480
cattacctgt tctactgccc aagaaaatga actaattcct tccataatca ggggaagagc 540
tactggaatc actggaaact ttgctaatat tgggggagcc ctggcttccc tcgtgatgat 600
cctaagcata tattctcgac ccctgccctg gatcatctat ggagtctttg ccatcctctc 660
tggccttgtt gtcctcctcc ttccg 685

<210> 849
<211> 413
<212> DNA
<213> Homo sapiens

<400> 849
gatttttaat aatgattcca cctgctatat tttgggtttt aattatcttc ggatggacgc 60
tcgtctacgg ttttgtatac ttcacaacgg gagaaacgat tatggacaag ttactccgtg 120
tcctctactg gattctcgtg aagaccttct tcagagagat ttcggtgtcg caccaggagc 180
gtatccccaa agataagccg gtcatgctgg tgtgtgctcc gcatgccaac cagtttgtgg 240
acggaatggt catttcaacc catctggacc gcaaggtgta ctttgtgggt gcggcctcga 300
gtttccgcaa gtacaaggtg gtgggtctct tcatgaagct gatggcgtcc atcatttcgg 360
gggagcgtca ccaggacgtg aaaaaagtgc tgaccggaat ggcgacggag aag 413

<210> 850
<211> 395
<212> DNA
<213> Homo sapiens

<400> 850
aatggatgtt ctatgtgaaa gctgagttcc ttgtttcttt ctcttgcccg tggctgactg 60
cgtgtgctct attgatgtct tgttcctggt tcttgacact gaccatcttg tctgtgaaag 120
gaggcactcc ggcgggcatg cttgatcaga agaaagggaa gtttgcttgg tttagtcact 180
ccacagaaac ccatggtaat gttcccctgt gctctgtgtg tgtaaatgcg tgtgggtgca 240
taccagactg aatgggaagg tgtctctctt gatggcttgt gccgcagtag ttctgtgtgt 300
gtgcatatat gtgtatgtat atatgttgtg tgggtgtgtg tgtttgtgaa gggatggcaa 360
cctgtccccc tcaaagccac tgccttatca tggct 395

<210> 851
<211> 904
<212> DNA
<213> Homo sapiens

<400> 851
cggcaaatgt agtgtattat gtgggagaaa atgtggtcaa tccttccagc ccatcaccaa 60
ataacagtgt tctcaccagt ggcgttggtg cagatgtggc caggatgtgg gagatagcca 120
tccagcatgc ccttatgccc gtcattccca agggctcctc cgtgggtaca ggaaccaact 180
tgcacagtga gtctgccagt tttctaacca gcccaaagct catcatgtgc ctaccccttg 240
cttagtaaac atgtgccctg cccttcctaa gaacagaatg aagaaagact tcttggggat 300
gacttagttt attgtagaat gtagggtgtc taaataaaag ctgctgcaca tactaagatg 360
tttagtttgt taaattatcc tattttatta tagctatttt atattaaaat ttaacaaatt 420
caggtaaaca ctatgtatta ggcaattaca gacctctaga gctattggtt ataaaagaag 480
aagtaatctg gccgggctca gtggctcaca cctctaaacc cagctcttag ggaggccaag 540
gtaggtggag gacttgagcc aagaggtcta gtccagcctg ggcaacatgg ggaaaccctg 600
tctctacaaa aaatacaaaa attagccagg catagtgtca tgcgcctgtg gtcccagcta 660
ctctggaggc tgaagcagga aaattgcttg agcttaagaa gcataagttg cagtggggcc 720
aagatcaagc ccactggatt tctgccttgg ccaagaaaag aagagggagg agggggaaga 780
agggaggagg aaggaaattt aaccagcttt cagctttgaa tgggaatggc ccgagatgaa 840
aaagtaacgg cgacaggggc attgacgagg gtccggggat gggcctgcaa cattatggta 900
gccc 904

<210> 852
<211> 592
<212> DNA
<213> Homo sapiens

<400> 852
cgacccacgc gtgcgggaag ctccgcagga tgggggagaa gatggcggaa gaggagaggt 60
tccccaatac aactcatgag ggtttcaatg tcaccctcca caccaccctg gttgtcacga 120
cgaaactggt gctcccgacc cctggcaagc ccatcctccc cgtgcagaca ggggagcagg 180
cccagcaaga ggagcagtcc agcggcatga ccattttctt cagcctcctt gtcctagcta 240
tctgcatcat attggtgcat ttactgatcc gatacagatt acatttcttg ccagagagtg 300
ttgctgttgt ttctttaggt attctcatgg gagcagttat aaaaattata gagtttaaaa 360

aactggcgaa ttggaaggaa gaagaaatgt ttcgtccaaa catgtttttc ctcctcctgc 420
ttccccctat tatctttgag tctggatatt cattacacaa gggtaacttc tttcaaaata 480
ttggttccat caccctgttt gctgtttttg gaacggcaat ctccgctttt gtagtaggtg 540
gaggaattta ttttctgggt caggctcacg taatctctaa actcaacatg ac 592

<210> 853
<211> 436
<212> DNA
<213> Homo sapiens

<400> 853
cccgaggcgg cttttaacca gcatctgggg tgaccaatct aagtagacag ggtcaggaca 60
acactgatgt gtatacagat gctgtttccc tgctgttctc ttctaagtat gaatcccggt 120
cccctttgca gacccagtag gtgaatccaa ttacgtagag caggggactg tggagctgtg 180
ttgtgagcag cacccaggtg atgccccatg gcagcatgtc ccacattcct tccatctttt 240
aaaaaaaatt tttctcggtg gcagtcttgc tctgtcgcct aggctggggt acagtggtgc 300
aatctcagct caccgcagcc tcaacctccc gggttcaagc aatcctccca ccttggcctc 360
ccaaagccaa agattgcagg tgtgagtcct cggctcggcg gtgggtcgac ccggaattcc 420
ggccggacga cgtcgt 436

<210> 854
<211> 266
<212> DNA
<213> Homo sapiens

<400> 854
agaaactgcc tctctggatg gtgactataa cctatagcct tgcccaatat gactcaggat 60
ttggtactga ctgtgccttt catgggatgc ttacttatcc tggtcgatgg cctaaagccc 120
aaccgtccag cttatatcca gacagggtct caagccaccc aggctggagt gcagtggcac 180
aattatggct cactgtagcc tcaccttcct gggatcaagc aatcttcttt cttcagcctc 240
cagaggagct gggaccacag atcctt 266

<210> 855
<211> 420
<212> DNA
<213> Homo sapiens

<400> 855
agcctgcagg cccagctcgc ccaggcagag cagcgggccc agagcctcca aggggctgca 60
caccaggagc tcaacaccct caagttccag ctgagtgctg aaatcatgga ctaccagagc 120
agacttaaga atgctggtga agagtgcaag agcctcaggg gccagcttga ggagcaaggc 180
cggcagctgc aggctgctga ggaagctgtg gagaagctga aggccaccca agcagacatg 240
ggagagaagt tgagctgcac tagcaaccat cttgcagagt gccaggcggc catgctgagg 300
aaggacaagg aggggctgc cctgcgtgaa gaccaagaaa ggacccagaa ggaactcgaa 360
aaagccacgt gtattgcgga cgaaatcgtc gacccgggaa gtccggtccg aatgctgtca 420

<210> 856
<211> 412

<212> DNA
<213> Homo sapiens

<400> 856
tttcgtcgcg ttctctcgct gcctgggctt ctgtggaatg agactcgggc tccttctact 60
tgcaagacac tggtgcattg caggtgtgtt tccgcagaag tttgatggtg acagtgccta 120
cgtggggatg agtgacggaa acccagagct cctgtcaacc agccagacct acaacggcca 180
gagcgagaac aacgaagact atgagatccc cccgataaca cctcccaacc tcccggagcc 240
atccctcctg cacctggggg accacgaagc cagctaccac tcgctgtgcc acggcctcac 300
ccccaacggt ctgctccctg cctactccta tcaggccatg gacctcccag ccatcatggt 360
gtccaacatg ctagcacagg acagccacct gctgtcgggc cagctgccca cg 412

<210> 857
<211> 403
<212> DNA
<213> Homo sapiens

<400> 857
cggtccggcg caaggagggc ggctggttgt ggaaaaaggc ctgggcgagc tgtgcctgca 60
gcccctggct ggtttgggaa ggctgggctc ccaggctggt ggtagtggtg ggggtgattt 120
tcctcatgaa gcccccactc cgtccactac tgcctgacac ccacgaagcg agcagtttcc 180
ggagctctcc gatgtagggg cagcaggtgt agagcagctg ctggtccacc acaggcgcat 240
tgtccaagcc atgctctggg gctactgtgt ccacctcaaa ggcatatgag ggaccctctt 300
ccagaaagaa caagtcctca gggactgtgg gaatctggaa aagccagtcc agggcagcaa 360
gaagcagcag cttgttcagg aaacacatct tcccctcact ctc 403

<210> 858
<211> 439
<212> DNA
<213> Homo sapiens

<400> 858
tgagggtggc gcaggggccc cggccagccc ggggctgcag cagtgcggac agctccagaa 60
gctcatcggc atctccattg gcagcctgcg cgggctgggc accaagtgcg ctgtgtccaa 120
cgacctcacc gagcaggaga tacggaccct ggagcattgt cccaattcct tcttctaatg 180
aagaaatacg cttagttgat gatgcgtttg gaaaaatttg tcacatggtc agtgatggct 240
cttgggtggt tcgtgttcag gcagcaaaac tgttgggctc tatggagcaa gtcagttctc 300
atttcttgga gcagaccctt gacaagaagc atgtcagatc tgaggaggaa acgtactgca 360
catgagcgtg ccaaggaact ttacagttcg gggagtttt ccagtggcag aaagtgggga 420
gatgatgctc ccaaggaag 439

<210> 859
<211> 985
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(985)
<223> n = a,t,c or g

<400> 859
ggcagcatgg tggtgccgga gaaggagcag agctggatcc ccaagatctt caagaagaag 60
acctgcacga cgttcatagt tgactccaca gatccgggga gcctggattg tcactggggg 120
tctgcacacg ggcatcggcc ggcatgttgg tgtggctgta cgggaccatc agatggccag 180
cactgggggc accaaggtgg tggccatggg tgtggccccc tggggtgtgg tccggaatag 240
agacaccctc atcaacccca agggctcgtt ccctgcgagg taccggtggc gcggtgaccc 300
ggaggacggg gtccagtttc ccctggacta caactactcg gccttcttcc tggtggacga 360
cggcacacac ggctgcctgg ggggcgagaa ccgcttccgc ttgcgcctgg agtcctacat 420
ctcacagcaa aacacggccg tggcagggac tggaattgac atccctggcc tgctcctcct 480
gaaagaatgt gatgagaaga tggtgacgcg aatacacaac gccagccagg ctcagctccc 540
atgtcttcct tatgattgcg ttaaggggga gctacggact tgcctagcgg gcaccccttg 600
gaataccctc ttgcccccgg gaacggtggt tttccagcct acgccccgaa ccccgagaat 660
gcatccacgc gcctcgtttt gctgaattga ngatccttgg acgtccttgc atcccacatc 720
gtggcgaaat tatttatcta cccccccccg ccggtgggag taattgcata cttccatccc 780
tattgcctcg ttttggagga gttggtgact ctcacttcta tcggtaatag gacattaccg 840
tatccgacct tatgactcgg ttccccgatc aacaatcgac tagtaccggc cgcggccacc 900
tacctcctta taacacttct cttaccggca cctccgtcct tggtagtaaa ctcctggcgc 960
tgtatctgtg tgctactgct aggcc 985

<210> 860
<211> 396
<212> DNA
<213> Homo sapiens

<400> 860
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cagaaagagc agcactatga ggaaaagatt aaagtgttgg acaatcagat aaagaaagac 180
ctggctgaca aggagacact ggagaacatg atgcagagac acgaggagga ggcccatgag 240
aagggcaaaa ttctcagcga acagaaggcg atgatcaatg ctatggattc caagatcaga 300
tccctggaac agaggattgt ggaactgtct gaagccaata aacttgcagc aaatagcagt 360
ctttttaccc aaaggaacat gaaggcccaa tgtatt 396

<210> 861
<211> 686
<212> DNA
<213> Homo sapiens

<400> 861
caagggaggg ctctgtgcca gccccgatga ggacgctgct gaccatcttg actgtgggat 60
ccctggctgc tcacgcccct gaggacccct cggatctgct ccagcacgtg aaattccagt 120
ccagcaactt tgaaaacatc ctgacgtggg acagcgggcc agagggcacc ccagacacgg 180
tctacagcat cgagtataag acgtacggag agagggactg ggtggcaaag aagggctgtc 240
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tgagatcgat tcagatgatt gttcatccta cccccacgcc aatccgtgca ggcgatggcc 480
accggctaac cctggaagac atcttccatg acctgttcta ccacttagag ctccaggtca 540
accgcaccta ccaaatggtg agtgtatgtt gcaccctggt ctttctctgc ctaggaagcc 600
tcttccctcc caattagatc tgagttgctt taagaaaaaa aggggacatg ttatgtaaat 660
tagcatttcc cacaacatgt cccttg 686

<210> 862
<211> 383
<212> DNA
<213> Homo sapiens

<400> 862
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cagagagttc aagcccacac tccctgggcg tgtctggctg gtgtcacctt ttggagccaa     60
cccctggtgg tggagtgtgg cagctgccct gcctgccctg ctgctgtcta tcctcatctt    120
catggaccaa cagatcacag cagtcatcct caaccgcatg gaatacagac tgcagaaggg    180
agctggcttc cacctggacc tcttctgtgt ggctgtgctg atgctactca catcagcgct    240
tggactgcct tggtatgtct cagccactgt catctccctg gctcacatgg acagtcttcg    300
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gaggctgaca ggcctggtgg tgt                                            383
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<210> 863
<211> 673
<212> DNA
<213> Homo sapiens

<400> 863
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ggagctggac accaaaggtg agcctggcag gggaggagcg tggggagacc tgtcagcccg    180
accctttccc tccccaccct tcctgcagcg tggggaggac ccccccctcac tcttccttgg    240
gatccccccc cacaacctta tttcttagcc ccctcctgag ggtagagtcg cgtggagcta    300
aatgtgttgt ctgttgctag gagacagtct gtaatttacc aaatgtgccg gtccttggcc    360
accgcacccc tagggaccac ccggaggctt ccccaccgct gacacccccg cgggcccccct    420
ctctgagccc tggtggcttg ggtttagaca gtccccagtg ttgcctgtgt taggggagga    480
gacagagttt gtttacttgt gggggactga ggaagtgcca ctaggatgcc ttgaaataca    540
tcaagagaag gtctgaaaac tgaaaagaga gtcctctaag gatccagggt gtccccccac    600
ctccttgctg acccttcccc tctggaagtg gcagccaatc tggggcccag gaatgttgtt    660
tcattgataa ggg                                                       673
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<210> 864
<211> 435
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(435)
<223> n = a,t,c or g

<400> 864
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ttttaggatg ggaattgaga tgtaagattt gggggtgagg gccnccctga cccataggcc    180
tgacatcctc atcctatgga ccctagagtc tggccactcc aggaacctga cctgctctgt    240
gccccgcccc tgtaagcata gaacaccccc catgatctcc tggagtgggg cctccgagac    300
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ctccccgggc cccactactg cccgttcctc agtgctcacc cttaccccaa agccccagga 360
nnaccggncc agccctcacc tgtnaggttg accttgcctg gggacagggt gtgacccacg 420
accnatacct ntncg 435

<210> 865
<211> 2161
<212> DNA
<213> Homo sapiens

<400> 865
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tgatctaatc ccgggagact tgagggacct ccgagtagaa cctgttacaa ctagtgttgc 180
aacaggggac tattcaattt tgatgaatgt aagctgggta ctccgggcag atgccagcat 240
ccgcttgttg aaggccacca agatttgtgt gacgggcaaa agcaacttcc agtcctacag 300
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ccataatatt cctaatgcaa atatgaatga agatggccct tccatgtctg tgaatttcac 480
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agtgactggg gatagtgaag gtgctacggt gcagctgact ccatattttc ctacttgtgg 780
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tctatgttta attaatgaat actaactcta agaacccctc actgattcac tcaatagcat 1920
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cttgtatgat ttggtatttg cataagacct tccctctaca aactagattc atatcttgat 2100
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c 2161

<210> 866
<211> 505
<212> DNA
<213> Homo sapiens

<220>

<221> misc_feature
<222> (1)...(505)
<223> n = a,t,c or g

<400> 866
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tggggttgga atattctact ttgttattta tatcatcata tccttcctgg ttgtggtgaa 120
catgtacatt gcagtcatac tggagaattt tagtgttgcc actgaagaaa gtactgaacc 180
tctgagtgag gatgactttg agatgttcta tgaggtttgg gagaagtttg atcccgatgc 240
gacccagttt atagagttct ctaaactctc tgattttgca gctgccctgg atcctcctct 300
tctcatagca aaacccaaca aagtccagct cattgccatg gatctgccca tggttagtgg 360
tgaccggatc cattgtcttg acatcttatt tgcttttaca aagcgtgttt tgggtgagag 420
tggggagatg gattctcttc gttcacagat ggaagaaagg ttcatgtctg caaatccttc 480
caaagtgtcc tatgaaccca tcaca 505

<210> 867
<211> 608
<212> DNA
<213> Homo sapiens

<400> 867
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gcagctctga accccaaagc ggctcctctg aattcccagt ttcaagttcc actctgtccc 120
tgctgggcat ctcgagatat gggaaacagg gctgttataa ttgccagaca gctgagttct 180
gtacatacct tgatttgcaa tttttttgg ctgcttctca ggacaactgg gggagattta 240
gattccttaa aatgcagtta tgaatctatt ggcctcaact ctatttctac ccatgaattc 300
atttgtactt ggcaaagacg acttaatttc tcatttgtta tgtcatttaa acctctcttt 360
agagcctctc ctcactctta cctgttaata atcggaagtc agctacatga aacgttcaat 420
ttgggttcca tctcctctga agaaaaatgc agttaaaaaa aaaataagag gtttggccag 480
ccgcagtggc tcacacctgt aatcccagca ttttgggagg ccgaggcagt cagatcacct 540
gggggcggga gttcgggaac cggcctggcc caacacagga gaaaccccgt cttatactaa 600
acaatata 608

<210> 868
<211> 772
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(772)
<223> n = a,t,c or g

<400> 868
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ctctggccaa ggtggctggc agacaagatg ctgcccctcc tgggggcagt gctgcttcag 120
aagagagaga agaggggccc tctgtggagg cactggcggc gggaaaccta cccatactat 180
gacctccagg tgaaggtgct gagggccaca aacatccggg gcacagacct gctgtccaaa 240
gccgactgct atgtgcaact gtggctgccc acggcgtccc caagccctgc ccagactagg 300
atagtggcca actgcagtga ccccgagtgg aatgagacct tccactacca gatccatggt 360
gctgtgaaga acgtcctgga gctcaccctc tatgacaagg acatcctggg cagcgaccag 420
ctctctctgc tcctgtttga cctgagaagc ctcaagtgtg gccaacctca caaacacacc 480

ttcccactca accaccagga ttcacaagag ctgcaggtgg aatttgttct ggagaagagc 540
caggagcctg catctgaagt catcaccaac ggggttctgg gggctcaccc ctggctgaga 600
atgaaggta tgattttggg agaggggaga gccccacggc aacagcacgg ccaatcttgg 660
gagggggggg tgggaccctc ccccctctcc ccnngnanaa acaccggagg gaagatagtt 720
gggttttggg aagaaatggc gaatgggacc ggcgccccac cccgcccccc ct 772

<210> 869
<211> 704
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(704)
<223> n = a,t,c or g

<400> 869
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tgagccatgg tgtcttctgc cgtcaaaggg cgaccctaac tgcatcctgc tggagtcgag 120
aaaaccaggt agactggaaa ggatgtgtct acagtaactg aaacacatca ctgcgttttg 180
ttacagtcaa tgatagggca gatctgagtt ccagagcacg gctcacagac ctttccttgc 240
atcagtctgt gccgaagtcn nnnnnnnnnc tttttctttt tttgcccac attacatcac 300
ttcataattt accacctacg tagcatgact gtatatttgg aatcatttct tcacaagttt 360
tagaccatat taaaggaaca ctggcagaac cctgtttgat ttccctttcg tctgttcccc 420
tacattgccc tcctggcccc cttgaggaac tagatgagcg attagaactg gccagaggtc 480
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tgtcggaccc ctgatgagca gacttccctg tggggtgttc atatccccat gccccgctca 600
gtgggcttca tgtctgagtc atatttgcct gctttccttt gaggtggtgg gcgccaaggt 660
tgtgacaaat gcccggagtc ctggagctcg ctgttacggt tttg 704

<210> 870
<211> 389
<212> DNA
<213> Homo sapiens

<400> 870
tttcgtgagg ctttgttctt ttgttctttg tgatagatct aattgctgct cactctttgg 60
gtctgtactg cgtttatgag ctgtgacact cgccgtgaag gtctgcagct tcactcctga 120
accagcgaga ggaggaaccc accagaagga ggaaaacgcg gaacacatct gaatatcaga 180
aggaacaaac tccagacacg ccgcctttaa gaactgtaac agtcaccgcg agggtccgtg 240
gtttcattct tgaagtaagt gagaccaaga acctgccaat ttcagacaca atggagagcg 300
ccagtcctgc tgcggggcca tacatctatt taatttcctc tcatcttccc cccggttccg 360
agaggaaggt gctttcacct gcactgttc 389

<210> 871
<211> 643
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature

<222> (1)...(643)
<223> n = a,t,c or g

<400> 871
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aaggagtacg gacgggagtc agaggcagag cgagggtgtg tggagggccg gcggggaccg 120
ccgggagcgc gcggatgtcg gtgttcctgg ggccagggat gccctctgca tctttattag 180
taaatcttct ttcagcttta ctcatcctat ttgtgtttgg agaaacagaa ataagattta 240
ctggacaaac tgaatttgtt gttaatgaaa caagtacaac agttattcgt cttatcattg 300
aaaggatagg agagccagca aatgttactg caattgtatc gctgtatgga gaggacgctg 360
gtgacttttt tgacacatat gctgcagctt ttatacctgc cggagaaaca aacagaacag 420
tgtacatagc agtatgtgat gatgacttac cagagcctga cgaaactttt atttttcact 480
taacattaca gaaaccttca gcaaatgtga agcttggatg gccaaggact gttactgtga 540
caatattatc aaatggacaa atggcatttt gggaatttat tttcatttta aatattggcc 600
ttccccctcc aattccgcca agtggaagnt tgaaagcccc cct 643

<210> 872
<211> 498
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(498)
<223> n = a,t,c or g

<400> 872
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cgcggcccgc catggatgtg gaggaggcgt tccaggcggt gggggagatg ggcatctacc 120
agatgtactt gtgcttcctg ctggccgtgc tgctgcagct ctacgtggcc acggaggcca 180
tcctcattgc actggttggg gccacgccat cctaccactg ggacctggca gagctcctgc 240
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tgacagccaa cggcagtgag atccataagc acgtgcattt cagcagcagc ttcacctcta 360
tcgcctcgga gtggttttta attgccaaca gatcctacaa agtcagtgca gcaagctctt 420
ttttcttcag tggtgtattt gttggagtta tctcttttgg tcagctttca gatcgcttcg 480
gaaggaaaaa agtctatc 498

<210> 873
<211> 404
<212> DNA
<213> Homo sapiens

<400> 873
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ggattccctc caggtgacga tgctctggtt ctccggcgtc ggggctctgg ctgagcgtta 120
ctgccgccgc tcgcctggga ttacgtgctg cgtcttgctg ctactcaatt gctcgggggt 180
ccccatgtct ctggcttcct ccttcttgac aggttctgtt gcaaaatgtg aaaatgaagg 240
tgaagtcctc cagattccat ttatcacaga caacccttgc ataatgtgtg tctgcttgaa 300
caaggaagtg acatgtaaga gagagaagtg ccccgtgctg tcccgagact gtgccctggc 360
catcaagcag aggggagcct gttgtgaaca gtgcaaaggt tgca 404

<210> 874
<211> 435
<212> DNA
<213> Homo sapiens

<400> 874
gaattcatcc gtcagtgtgg agtggccctc tgcatcgtgc tgggattctc catcctgtct 60
gcatccatcg gcagctctgt ggtgagggac agggtgattg gagccaaaag gttgcagcac 120
ataagtggcc ttggctacag gatgtactgg ttcacaaact tcctatatga catgctcttt 180
tacttggttt ccgtctgcct gtgtgttgcc gttattgtcg ccttccagtt aacagctttt 240
actttccgca agaacttggc agccacggcc ctcctgctgt cacttttcgg atatgcaact 300
cttccatgga tgtacctgat gtccagaatc ttttccagtt cggacgtggc tttcatttcc 360
tatgtctcac taaacttcat ctttggcctt tgtaccatgc tcataaccat tatgccccgg 420
ttgctagcca tcatc 435

<210> 875
<211> 703
<212> DNA
<213> Homo sapiens

<400> 875
cctacttctc ccccagtgga tgcagaatgt gctgggccag gtgctggacg cgctggaata 60
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ccctcaactt ctccttcagc cataaatcag acatctggtc cctgggctgc atcattctgg 180
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caggaggcgt agcccccagg acccacgaca cttttagggt tccagaaaaa agttttcatt 660
caacataaaa aaaaaaaaat tcctaaagac aaaaaaaaaa aaa 703

<210> 876
<211> 429
<212> DNA
<213> Homo sapiens

<400> 876
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aaactgaaag atcccctaat ttgatgagtg agagggtcga gcggaactgg agcacgggcg 120
gctggctgct ggcactgtgc ctggcctggc tgtggaccca cctgaccttg gctgccctgc 180
agcctcccac tgccacagtg cttgtgcagc agggcacctg cgaggtgatt gcggctcacc 240
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ctggccaggt ggccggcacc acgcgggcaa agccctcctg cgtggacgac ctgctcttgg 360
ctgcccactg tgctcgtaga gaccctagag ctgcactccg cctcctgctt ccacagcctc 420
catcgtcct 429

<210> 877
<211> 1140
<212> DNA
<213> Homo sapiens

<400> 877
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caccaagatg atcctgagct tgctgttcag ccttgggggc cccctgggct gggggctgct 120
gggggcatgg gcccaggctt ccagtactag cctctctgat ctgcagagct ccaggacacc 180
tggggtctgg aaggcagagg ctgaggacac cggcaaggac cccgttggac gtaactggtg 240
cccctaccca atgtccaagc tggtcacctt actagctctt tgcaaaacag agaaattcct 300
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ctggaggtgc tgccctggct acacgggccc caactgcgag caccacgatt ccatggcaat 480
ccctgagcct gcagatcctg gtgacagcca ccaggaacct caggatggac cagtcagctt 540
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<210> 878
<211> 1139
<212> DNA
<213> Homo sapiens

<400> 878
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cattggggag tgtctaagcc atgacgagaa gattccctct gcatcacggc gaacccccag 1080
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<210> 879

<211> 478
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(478)
<223> n = a,t,c or g

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<210> 880
<211> 546
<212> DNA
<213> Homo sapiens

<400> 880
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attcac 546

<210> 881
<211> 918
<212> DNA
<213> Homo sapiens

<400> 881
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acatttaaaa aaatggaaaa ctatttgaga cataaacagt tgtgtgatgt aattttagtc 840
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<210> 882
<211> 604
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(604)
<223> n = a,t,c or g

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tcactctaag attgatccac atttttactg taagcagaaa cttaggaccc aagattataa 240
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tggatggtac cacgtatgac tttgcccact gcaccttcac tgggaatgag tccaagccac 480
tgtgtgtgga gctggatgag cacaacctgc cccggttccc cgagtggatc accatccccc 540
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ttgg 604

<210> 883
<211> 1206
<212> DNA
<213> Homo sapiens

<400> 883
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aaggcaggtg aaagcaagcc gagccccact gctgaaggac aaagccacag gaagcctgat 780
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acagagcatc ctgcatttgt tgcctcgggg tgcagcccca aagataaagc cagcagtgtg 1020

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ctcgat 1206

<210> 884
<211> 420
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(420)
<223> n = a,t,c or g

<400> 884
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cggtgcagca gtattcgccc aacgggcgta tcggaaacca ctgatctcgt tccttgtcgg 180
cttctcgatg ctggcggccg gcgtaaccag tgcggcggga ctcgccctcg ccttctcggg 240
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cctggtggga cttctcaatg ccagaggcat caaggagtcc atgcgcgcca ncgtcgtcat 360
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<210> 885
<211> 1696
<212> DNA
<213> Homo sapiens

<400> 885
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ggggagactc cactggggag gctggagctg gggtggtgt tgagcccagc cttgagcatc 480
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ctgcaaaaaa aaaaaa 1696

<210> 886
<211> 1410
<212> DNA
<213> Homo sapiens

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<210> 887
<211> 413
<212> DNA
<213> Homo sapiens

<400> 887
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gggaccttca ggactaaata gtattaaggt aagaacaaaa ttggattgtt ttggtatctg 240
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agataccagc ttcgtataaa ccatttcaaa gatgtccttt caggtgtcac gggaagtctc 360
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<210> 888
<211> 887
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(887)
<223> n = a,t,c or g

<400> 888
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ataggtcaag taagtaaata gagatttaaa aaattatgaa cacaaaggaa gtaacagcct    180
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aaaatgggac agggcctgct aagttcaaca tacctcacag tgttacactt gattcagctg    840
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<210> 889
<211> 1871
<212> DNA
<213> Homo sapiens

<400> 889
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<210> 890
<211> 379
<212> DNA
<213> Homo sapiens

<400> 890
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gacttgtctt cggtagggac agtcaagtca ggcaaaaccg tgaacttggc tacagcaggc 180
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gtcatggatt tgatagcctc agaaccagac aagctgggca aagccatggc tacaagaagc 300
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gtcaagccgg acatgtatt 379

<210> 891
<211> 397
<212> DNA
<213> Homo sapiens

<400> 891
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tcgtgggcgt caagtatgtc aacaagctgg cgctggtctt cctggcctgc gtcgtgctgt 120
ccatcctggc catctatgcc ggcgtcatca agtctgcctt cgacccccg gacatcccgg 180
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tcccgggcgc ggccagtggt gtcttcctgg agaaccg 397

<210> 892
<211> 398
<212> DNA
<213> Homo sapiens

<400> 892
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cctgcccccca gctccggaaa gtggcagcac caacccatgg gttcagttct tttgttccac 300
ggagaacaga catgccctgc ccctcttcac ctccctcctc aacaccgtgt gtgcctatga 360
ccctgtggaa tacgggatcc cctacaacca cctgtatt 398

<210> 893
<211> 397
<212> DNA
<213> Homo sapiens

<400> 893
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tcgagaatgc tgagaaaatc ctagggtacc gtgtatt 397

<210> 894
<211> 380
<212> DNA
<213> Homo sapiens

<400> 894
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tctatttcta catgtggaag ttcgtgtctc ctctatgcat ggctgtgctc accacagcca 180
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<210> 895
<211> 389
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(389)
<223> n = a,t,c or g

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agttcttgtc tgaggagcac acgtgtagt 389

<210> 896
<211> 415
<212> DNA
<213> Homo sapiens

<400> 896
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gttacttaga ctacaggcca gtaactgact gtaaaccagt ggagtatgag tttttctggg 360
gcccaagatc ccacctagaa accaccaaga tgaaaattct gaagttcatg gcgaa 415

<210> 897
<211> 428
<212> DNA
<213> Homo sapiens

<400> 897
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tctctatgct tctcctggct tctcagcaca ttgtcaggac agaccttcat gtacaggggc 420
cctgtatt 428

<210> 898
<211> 444
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(444)
<223> n = a,t,c or g

<400> 898
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caatgccatg ctacagttgg gccccttctt atattggaca tttctggctg cctttgaagg 180
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tctcaagcaa cagagaatgg cgaa 444

<210> 899
<211> 436
<212> DNA
<213> Homo sapiens

<400> 899
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tctccagcaa caggtcttaa acagtgggtg gaagctgtac agggataccc aggatgggga 120
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agttcagcac cagaaaattc acagtgaagg ctttctttca aaaaggtctg accccattga 420
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<210> 900
<211> 466
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(466)
<223> n = a,t,c or g

<400> 900
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ctgttgggcc tccgagagga ctgggatgac cgctggatca acgatgtgga agacagctac 180
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gccctggctg ctttcctttc ctactgccct ggaatgggtg ttgctcttaa gatgtatccc 420
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<210> 901
<211> 412
<212> DNA
<213> Homo sapiens

<400> 901
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gctgaatggc taccgtgtct ggatagccaa agcagaggaa gtcatgctcg ctgaagaaaa 360
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<210> 902
<211> 1334
<212> DNA
<213> Homo sapiens

<400> 902
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tgttaaaaaa aaaa 1334

<210> 903
<211> 701
<212> DNA
<213> Homo sapiens

<400> 903
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<210> 904
<211> 546
<212> DNA

<213> Homo sapiens

<400> 904
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gctgca 546

<210> 905
<211> 2642
<212> DNA
<213> Homo sapiens

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<210> 906
<211> 2053
<212> DNA
<213> Homo sapiens

<400> 906
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<210> 907

<211> 861
<212> DNA
<213> Homo sapiens

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<210> 908
<211> 1691
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<210> 911
<211> 1219
<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

<400> 911

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<211> 814
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(814)
<223> n = a,t,c or g

<400> 912

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<211> 687
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(687)
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<210> 915
<211> 788
<212> DNA
<213> Homo sapiens

<400> 915
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<210> 916
<211> 758
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(758)
<223> n = a,t,c or g

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<210> 917
<211> 2709
<212> DNA

<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<211> 1225
<212> DNA
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<212> DNA
<213> Homo sapiens

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<212> DNA
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<212> DNA
<213> Homo sapiens

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<210> 927
<211> 415
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(415)
<223> n = a,t,c or g


<400> 927
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ctgaacgact cactttagct tttcttatag gacaggtcta ctagtgacaa actctgtcca    180
tttttttcta tctggcagng acttaatttc tccttcattt ttgaaagggt agttttgcca    240
gataaagaat tcttagttcg attttttttt ctttcagcat tttgaatatg ttaccttctg    300
acctccatgg tttctggtga gaaatcagct gttaatctta ttgaggatcc cttgtatgta    360
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<210> 928
<211> 1503
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1503)
<223> n = a,t,c or g


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gttaaagggc agcctggcat tgatggctgg tggagctctg aagcctgcct ctgcaggtgc    180
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<210> 929
<211> 834
<212> DNA
<213> Homo sapiens

<400> 929
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ctggggcttt tcctgctggc cctcggtacg ttcctcatga gccatgatcg gccccaggtc 360
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tgccagtgct accccaagat caccttcgtc cctgctgact ctgactttca aggcatcctc 480
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gttcaggcct ggatggaggc tgccgtggtc atccacaagg gcttaaacga gagtgaaggg 780
gaaagacgcc taactcagag ctggcccggc cccctggcct gtccccaggg ccct 834

<210> 930
<211> 1434
<212> DNA
<213> Homo sapiens

<400> 930
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tctggatggt ggagaagagc agggttccga gtctgaggaa gacataacct tgtgcctgcc 180
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<210> 931
<211> 410
<212> DNA
<213> Homo sapiens

<400> 931
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gatgcagata tgtgcatgta ttcacgcaca ttcatgtagc gcatgtgtgt gttcgtgcat 180
atggtgtatg catgggtgtt cgtatctgtg gggtacaggc atcatgcacg tgtgttcatc 240
tgtgtggggt gtgggtatac ctggactgtg gcctgaggct cccctacagg acactgctcc 300
ctgccgcctc cccaggggat aacaggaccc tgctcctctt gctaaagcca gtttgggagc 360
acccccaccc aggcactcca cgccagccag gctcgcctct gaccagatgg 410

<210> 932
<211> 2361
<212> DNA
<213> Homo sapiens

<400> 932
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catataacat ttacatagga gaagctatct gtgaaactcc cagtgactta tatggaaggc 120
ttttaaaaga aaccaacaaa caagagctat gtcccatggg caccggcagt gattttgacg 180
tgcgcatcct gcctccatct cagctggaaa atggctacac cactcccaat ggtcacacta 240
cccaaacatc tttacacaga ttagtaacta aaccaccaaa aacaacaaat ccttccaaga 300
tctctggaat cgttgcaggc aaagccctct ccaaccgcaa tctcagtcag attgtgtctt 360
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atctgaaaag taaaaaaaaa a 2361

<210> 933
<211> 680
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(680)
<223> n = a,t,c or g

<400> 933
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ctccctccct ccttttggag cccccagtgt ctactattcc catctttttt atttgagaca 120
gtgtctcgct ctgttgccca ggctggaatg cagtggcacg atcacggctt actgcagcct 180
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gctcaggctg gtctcaaact cctgagctca agcaatccac ctgtctcggt ctcccaagag 360
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ccatttcaca tcacgagacc caaagggaag ggtgcacgtc agaagcaaat ccaggatgcg 600
aagccaggtc tgtctgatgc caaagggcaa gccctgagcc cgaaacccca tactgcgcat 660
gcccagcaca cctgcgtttc 680

<210> 934
<211> 728
<212> DNA
<213> Homo sapiens

<400> 934
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gcgaacccca ggcccttccc aggtttgcgc gcgggggcca tccagaccct gcggagagcg 120

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tttgtttgac agttgccaga ctatgtttac gcttctggtt ctactcagcc aactgcccac    300
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gcaggaatat tcagctaaag gaccaaccac aaaatcagat ggcaacagag agaaaataga    600
tgttatgggc cttctgactg gattaattgc tgctggagta tttttggtta tttttggatt    660
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<210> 935
<211> 883
<212> DNA
<213> Homo sapiens

<400> 935
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tatttatttt tttgagacac agttccactt tgtcttttg tcacccagga tggagttcag     120
tggcacaaac atggctcact gtagcctcga cctccctggc tgaagggatc ctcccacctc    180
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gagctccgca gccttttcgg cgcgaacaaa ataccttcta acacacgtgg ggacgcggtc    840
ccctaatctc gtcacagcac gtcctgatcc tgaggcaagc ccc                      883
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<210> 936
<211> 952
<212> DNA
<213> Homo sapiens

<400> 936
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gaccatggat gaatgacata agaatttaac tacttttttt tttcttttct tttgaggcgg    180
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agcctcccgg gttcaaggga ttctcctgcc tcagcctcct gagtagctgg aactacaggg    300
gtgggccacc acacccagct aatttttgt atttttagaa aagacagggt ttcaccatgt     360
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tattttgtag agaatcatcc caggagcaca ttccctcact gagggttcca gccacctctt    600
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agattggcag agctgccctg gacaacagca ctgcaaaaca ctgtggcaga aggtttggtc    720
tacataccaa ggcagccaaa gtattaattg cattctctgt gatcacaaaa taaggcgctg    780
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aattattctc ttcatgtttt aagaatgaca ggcttttgct ctgccagctc caagcatagt 840
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<210> 937
<211> 1691
<212> DNA
<213> Homo sapiens

<400> 937
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cactcgctcc caccttgtcc tcacggtcca gttttcccag gaatccctta gatgctaaga 180
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<212> DNA
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<212> DNA
<213> Homo sapiens

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<211> 1026
<212> DNA
<213> Homo sapiens

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<212> DNA
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<211> 401
<212> DNA
<213> Homo sapiens

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<210> 949
<211> 432
<212> DNA
<213> Homo sapiens

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<210> 950
<211> 450
<212> DNA
<213> Homo sapiens

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<211> 1321
<212> DNA
<213> Homo sapiens

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<223> n = a,t,c or g

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<210> 952
<211> 1729
<212> DNA
<213> Homo sapiens

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taaaaatgta aaggggagag tgggtacata tctgaacatt aaactttagg cactttctgg 240
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gtgcctcaat gtccaaacaa atctggctta aaatttccaa ctcaagccat ttaatagggt 480
atgtatgttt ccaattaaat gaaataaaat taagagaatt aaaagtgata gggaaaggtg 540
gtacagaaaa tctaaaaagt ctaaattagc tagcttattt tgataaaaca tacaaaataa 600
caaattcaca tctcttaaaa tatcttaatc agaagtcaag acagttgtcc agaaaatgtc 660
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<211> 1205
<212> DNA
<213> Homo sapiens

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atagacgagc ttcaaagcaa ctttaaaaga ttcttctgta gaagtatgag ttcatcctct 180
cttatatcag ggaatgtccc tcctcatgaa gtgttcaaga agactaccgg acgcgtgggt 240
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<211> 489
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(489)
<223> n = a,t,c or g

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tcctgcctgc ccatctgctt tcctttctta tctctggngc aaattctgca tatagtcgct 480
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<210> 955
<211> 1172
<212> DNA
<213> Homo sapiens

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ctggggaggg gatgccatac tgctagagat gagggaagag agccccaagc aggaaaacat 180
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<210> 956
<211> 1286

<212> DNA
<213> Homo sapiens

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<211> 2874
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<210> 959

<211> 476
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(476)
<223> n = a,t,c or g

<400> 959
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attttgtcca tttctctaag ttgataaatc tgttggcata naattgttca taataatcta     420
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<210> 960
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<212> DNA
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<400> 960
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tccagcgtcc tttccagggc gtccaactcg gcagctgctc ctttccgcaa ggctggcctg     660
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<210> 961
<211> 679
<212> DNA
<213> Homo sapiens

<400> 961
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tctgcttttt aggccaaaga ttctgccctg gtcttcgtcc tctccacacc cccaggatct 420
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gaaaaactcc ccccagcccc tcattttccc aggccctcta cccccccccg tccccccccc 600
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ccctcccctt gtcgccccc 679

<210> 962
<211> 782
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(782)
<223> n = a,t,c or g

<400> 962
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gtatgctgac atgtcgcctg atacctgctg tgtctcaggt ccaggctaca ataatccaac    300
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actagccagg tgcagtggca cacgcctgta gtcccagcta gttgggaggc tgaggcagga    480
gaattgcttg aacccaggaa gtggaggttg cagtgagctg agatcacacc actgcactgc    540
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tccttctgga ggacactctg gtcatctngg gatcagctng gtgtctactg gggnagcaga    660
ccagttagga gaattgctta aatatgaaag cttagttggt ttttagaaat tcacataggc    720
ccanccccnt catgtaaagg naccacgggn ttgggttnaa tttacnttgg aaaattattg    780
tc                                                                   782
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<210> 963
<211> 1734
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(1734)
<223> n = a,t,c or g

<400> 963
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gagagaacct tgactgtgtt ttattatttc atggcttgta tgagtgtgac tgggtgtgtt   1260
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ccaatggttt tctcacttca ggggccaacc cacgccccct ttctgctgaa gtttgggtgc 1680
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<210> 964
<211> 1098
<212> DNA
<213> Homo sapiens

<400> 964
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caggtcctcg acccggga 1098

<210> 965
<211> 422
<212> DNA
<213> Homo sapiens

<400> 965
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gggccaagga cttcattcga gaggagtttc tgtggatcag cactgccagt ggagatgggc 180
gtcactactg ctaccctcat agcacctgcg ctgaggacac tgagaacatc cgccgtgtgt 240
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aagggaaccc ccagatttag ttaaagcctt aggcacaatt agttaaaagt gaaacgtaat 360
tgtacaagca gttaatcacc caccataggg catgagtaac aaagcaacct ttcccttacc 420
cg 422

<210> 966
<211> 617

<212> DNA
<213> Homo sapiens

<400> 966
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gcagtctctc agaaagagac acacccaccc cacaaaaaaa tccttggaat ttgtatgtgc    180
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<210> 967
<211> 1446
<212> DNA
<213> Homo sapiens

<400> 967
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gcggggctct gctccaaagc cgcgctgttc ctgctgctgg ccgctgcgct cacgtacatc    180
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<210> 968
<211> 1495
<212> DNA
<213> Homo sapiens

<400> 968
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gaaccaagtt tataggccgg gggggggaag aggaattttt tttttttggg gcccccaaaa 1440
taaatttccg ggccggggtt taaaaaacgc ggggagggaa aaaccccggg cttcc 1495

<210> 969
<211> 999
<212> DNA
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<212> DNA
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<212> DNA
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<212> DNA
<213> Homo sapiens

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<211> 377
<212> DNA
<213> Homo sapiens

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<210> 984
<211> 1813
<212> DNA
<213> Homo sapiens

<400> 984
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<211> 379
<212> DNA
<213> Homo sapiens

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<212> DNA
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<210> 987
<211> 1884
<212> DNA
<213> Homo sapiens

<400> 987
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<210> 988
<211> 935
<212> DNA
<213> Homo sapiens

<400> 988

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<212> DNA
<213> Homo sapiens

<400> 989
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<211> 703
<212> DNA
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<211> 335
<212> DNA
<213> Homo sapiens

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<211> 447
<212> DNA
<213> Homo sapiens

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<210> 993
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<212> DNA
<213> Homo. sapiens

<400> 993

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<212> DNA
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<400> 994

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<211> 650
<212> DNA
<213> Homo sapiens

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<210> 996
<211> 742
<212> DNA
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<210> 997

<211> 745
<212> DNA
<213> Homo sapiens

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taaattagct gcgcgtgggg ccccg 745

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<211> 1040
<212> DNA
<213> Homo sapiens

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<211> 2528
<212> DNA
<213> Homo sapiens

<400> 999
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<211> 399
<212> DNA
<213> Homo sapiens

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acgaccctac atgtctacac tcactccctt ctagtccc 1058

<210> 1002
<211> 586
<212> DNA
<213> Homo sapiens

<400> 1002
ggttttacca tgttttccag gctggtctcg gactcctgac ctcgggtgat ccgcctgcct 60
caggttccca gagtgctggg attataggca tgagccatgg cacccggcca gtagcttcaa 120
ttttttgtat ttagtgggga tgaaaaaaat cttatttaac tagagtatat actatggtat 180
ttgcttgggg tttagcagtg aacaagacat ctctggtccc catcttcatg gaccttagtc 240
tggcagggaa gatttacatt aaacaaagga tgagaatgga agagaacttg cttggtgata 300
atgaggtcaa agaagagaaa gatcaagctg ttaaatggca aactttgagg tggtgaggag 360
gactgatatg ggtgtaaagt cttaatgaag gagggaaaag tgactgaaga ggtagacagt 420
tgagaaatag ttggtaaaag gtgatagtgt tgatttgagc tcaggtgaac aagcattttt 480
ataaggggct agaggaagaa tggtccagaa atggctttga ggaatgatga aaacaccaac 540
atcaatactg gactcttaag gtgtatgggc tgtgtagatc tcattc 586

<210> 1003
<211> 401
<212> DNA
<213> Homo sapiens

<400> 1003
ctcccagccg ccgcccgggc ccgcgcgctt ctccgccgcg cttcgctcgt ctcctctcga 60
ccccacaccg ccggtcgaca tgatccgctg cggcctggcc tgcgagcgct gccgctggtt 120

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cctgaccctg ctcctactca gcgccatcgc cttcgacatc atcgcgctgg ccggccgcgg    180
ctggctgcag tcgagcgacc gcgtccagac gtcctcgctg tggaggagat gtttccttcc    240
acaggggcgg cggcggcggc agcgggtcct aagaggacgg ctgccacagc ctcatggagt    300
acgcgtgggg tcgagcagcg ctgccatgct tttctggggc gtcagcatcc tggagatctg    360
tttcatcctc tccttcttcg tcctgtgtgt accccagata c                         401
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<210> 1004
<211> 666
<212> DNA
<213> Homo sapiens

<400> 1004

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accttggcac gaggcctcgt gccactgctg gataacaaca tgaatatcaa tttagcttat     60
ttcggttttg gaaatttctt taaaaggggg gaactgctgg caacatggtg tggcagcccc    120
ccttatgcag ccccagaagt ctttgaaggg cagcagtatg aaggaccaca gctggacatc    180
tggagtatgg gagttgttct ttatgtcctt gtctgtggag ctctgccctt tgatggaccg    240
actcttccaa ttttgaggca gagggttctt ggaaggaaga ttccggattc cgtatttcat    300
gtcagaagat tgcgagcacc ttatccgaag gatgttggtc ctagacccat ccaaacggct    360
aaccatagcc caaatcaagg agcataaatg gatgctcata gaagttcctg tccagagacc    420
tgttctctat ccacaagagc aagaaaatga gccatccatc ggggagttta atgagcaggt    480
tctgcgactg atgcacagcc ttggaataga tcagcagaaa accattgagg taaagtgatc    540
agagatttcg ggttctact gcacttagct acttgaaatt tcatgctcac acctgtcatc    600
ctggtctttt agcacatgta tctccagcgc ctaggcgtac tgttcagtgt tccctataga    660
tgacat                                                               666
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<210> 1005
<211> 1968
<212> DNA
<213> Homo sapiens

<400> 1005

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tttttttttt ttcatttgag acggagtctc gctctgtcac ccaggctgga atgcagtggc     60
acgatcttgg ctcactgcaa cctctgcttc ccgggttcaa gcagtttcct gcttcagact    120
tccaagtagc tgggattaca gacatgccac catgccaggc taattttttt aatattttta    180
gtagagatgg ggtttcacca ttttggccat tctagtcttg aactcctgac ctcaggtgat    240
ctgcccgcct tggcctccca aagtgctgac attacaggcc tgagccactg cgcccagcca    300
ataccatgag ttttaagcct cacatcgtca cttgctgtca ctgccagtgc ctgttttatt    360
catattgctg gacaacagac atatgccacc aattgtatga ttaataaagt ctttttctgg    420
ccatttgtc cattataaag gaaataaact aattgttaac ttgcatagat tacttcttag    480
tttcctatgc taccaccact gccaagggag aaaaaaatac atcattttgt aatgtcttta    540
gtatttcttt ataactagtg ttaaggtttt gttaatttta ttgtatacat ttgtaacatt    600
tattaggagc cttttaggtt ccaaaacaaa caaaaggcat aaaaaagtct agcttagaac    660
cacttttcac ttgctttcat ttttaatttt attcacttaa cagctaacat ctttcttgtt    720
tcttgttttt tccattatat ggttatcgat tcaactcttg ctatattcct taaatttgta    780
tgtatcatca gaagaaagag atgaacaatt tagtgtagat attttattct ggagaataat    840
attcaattaa attatttcta cagcaggcca gtaacaacta gattatttgt cctttctcag    900
tataatttta aagagcattt tgttttattg tcacaatttg gtaccactag tcccaggtaa    960
ccattgggcc aaaggatcag ttgagaaaca gttaaggatg aattagcata agttatggaa   1020
cagtgttaga aaacaactca aaagtatatt ctttattaat gaggtggtca ttattacatt   1080
tgtgtcaatg aagggcagtg tagttatttt aaaatgacta atattttctc cccaaataca   1140
gaataattca gatgggcaac caagttttca agagactgct gtaggtgaag tctgtctagc   1200
caaggcagaa cacttacagg agtccctaac tgtgccaccc ttggaatggg ttagtgtaca   1260
ggctcagaat attgtggatt acagtttttc agagaaaact accacagatg tagacaaaaa   1320
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tgatctctga aagcattgcc agcagccagg tatgttcctt agatttccac ttaggtttgg 1380
cattttggca gataagctaa tcttgtataa agcatcacat tttactatgc ttagtgttcc 1440
tgggttgtat ttatctacat tattagaggg aatttttatt ttaaaaaaat tgtcattcat 1500
gagaagaatg ggagttcatg ccacatagta ttttaccaat ttatataaag tgggaaaagt 1560
ctttaatact tcatgatcac ttgaattaaa gtttttgtat ctctggaaag tagaatagtg 1620
ctttcatttg aatgaaaagt gtttatagat tcagaaagag agatgatatc tttgtatctt 1680
gatttatata cagaccattt cagaggaagt taaatgtctt acaaatccaa tactttctaa 1740
tgctctaaca gtgttggcta tttaaaagaa catgtggcaa gttctatatg aatattcttg 1800
gtcatctcga ctaattctga ggcaatgatg gacagagatg ctacttctta tttaactcta 1860
ggcatgttga cttttcaaag cggtttcctt atttctaaac agagatgatg atcaatgagt 1920
tactaattct ttagaggaaa aaatgcataa tttgagtgtg gaagtgat 1968

<210> 1006
<211> 380
<212> DNA
<213> Homo sapiens

<400> 1006
tctcggagcc cccagcccgg gcaggagtgt ggaaagtgcc gaaaccgtgc tgaaaatgca 60
gagaggccag gacccgatgg ctgcgcgcac ctgctgctcc ttgtcgcaac atctgctgac 120
tcccgaccac ccggaaaacc aggaccagaa cctgcaggcg aaccatattt acctatacgg 180
aggctgatga gagctcgccg acgtcatggg cataggtgac cgctgtgaga acaagataac 240
gcctacacca ctggtcacat gttccacatt gattttggcc gcttcctggg ccgtgcccag 300
atgtttggca acatcaagcg ggaccgtgcc cccttttgtct tcacctcgga catggcgtat 360
gtcatcaacg ggggtgacaa 380

<210> 1007
<211> 752
<212> DNA
<213> Homo sapiens

<400> 1007
gtctcactcc attgcccagg ctggagtgtt caagtgattc tcctgcctca gcctcccgag 60
tagctggaat tacaggcgcc caccatcaca cctggcaaat ttgtgtattt ttagtagagg 120
tggggtctcg ccatgttgcc caggctggtc tggaactcct gacctcaggg gatcctcccg 180
tctcagcctc ccaaagtgct gggattacag acgtgagcca ccgtgcccgg cctgccttcc 240
ttctttgttt cccacacctt catctctgca tcctgcctct tgaagtcttc atcttcatca 300
gagtcacatt cggggaactg gtagatgtgg atctcctctt ccttcaactg atcccggatc 360
tcaggggaaa cagatataga gacagtgtga aacgggccac aatgacagac atttcatgac 420
cagagacagt gagacacaga gatactgggt ggtcagagac agagagaaag acatgaaaga 480
cagagatggg gagagatgga catacaggaa gacaaaaaca aaatctcaga gacatagatg 540
gtgagaaaca caagattcta agatggggca gacattaaga gaccaggaga agcctgggca 600
atatagctag atcccatctc tacaacaaat atacacatat atttgaaac aaggtttcac 660
tctatcaccc aggctggagt ccagtggctc catcttggtt cactgcagcc tcaacctctc 720
aggcccaggc gatcctcccc cctcctgcct cc 752

<210> 1008
<211> 1145
<212> DNA
<213> Homo sapiens

<400> 1008
caatgatatg ctcttctaca ctcttaaaaa ttatagacaa ccccaaataa cttttattta 60
gtggttttaa caatatttac catgtctgaa atatgataaa cattaaaatt agtattttgg 120
aaaaatgcca tattagaaac tgatgattta aaagtaacaa caatgaatcc attacatgtg 180
aacatactgt tttttgttt gtttgtttgt ttgttttgag acggagtttc actcttttgc 240
ccaggctgga gtgcagtggt gcgattgcag ctcactgtag tcttcgcctc ccaggctcaa 300
gtgattctca tgcctcagcc tcctgagtag ctgggattac aggtgctcac caccacaccc 360
ggctaatttt tgtagagatg gggtttcacc gtattggcca ggctggtctt gaactccaga 420
cttcaagtga tccacccacc ttggcctccc aaagtgctgg gattacgggc atgagccact 480
gcaccaggcc aacatacttt ttataaaaac agctgtcttc tctaaaacaa caaaaaaatg 540
tagataatag tagtatcatt ttatagtttt gcaactctct ttaatgtttg gcttaataaa 600
agatagttgg attctcgtat ctgtttttgt attcagtctg ttgtggatgg tgatttgatt 660
gaagtaaatg aaggaaatcc agctacatac agatttggag ttggaaaaaa tagtatttta 720
ataacctttt tagatcatgg tggatactct tcttttgttt ggcctcaaaa ttagaacaaa 780
ggcagtttct gaaaataatt gtatgtggtg aaaaattaat gaatcttata tggaccatac 840
ttttaattta gaatattggt ctaaaaaaaa aaaagggggc cctttaaaaa caaatttagt 900
acgggcgtgg atgttaactt ttttggggcc agattgttcg ggcgggtgta caggggaagg 960
ggaaaacggg tggggctagg acgtgttgaa caaatgacgt gctcgtgctg gcgaccgacc 1020
tcttgtacga gaggtaatgc gattgggaac gagtgatggg tgcgtcgatt ggtcgaggcg 1080
tgcgatgcat gcaatggggc gcttaggcgt tgggtaggat gggtgggacg gatcgaacgt 1140
tctcg 1145

<210> 1009
<211> 737
<212> DNA
<213> Homo sapiens

<400> 1009
actgtatatc taaattgcag tgtcacccct cccatgctcc acatttcttc agcctttcac 60
tgctatgctt ttcttccact ttttgctctg acacataatt tcattttctt attttattta 120
ttatctctct cccccaaact agaatgtaaa ttccaggaag gcagagattt ctatctattt 180
ttttttgtct tccccatatt ctggcatgtc tggcatagaa aaggcattta gtaaacattt 240
gttaaatgaa ttgactatct tttctctgca aacttgttcc tcaaattctg ccaaacctaa 300
attgaaacaa gcaggtattg tattttggta caagtcctgg ggctgtggat taaatccaag 360
agcattgatc catatttttc aggggaatct cacattataa ataatgcggc atcgcttggg 420
taaaaacttt tgtgaaagac taaatatgac atgagtctgt ttaaggaagg cgttaaatac 480
gctcagacta cctctggcga attagattta tatttacatg cccctgttga taaggcctta 540
tcacaccacg agcaccttca cttaataaca gtgttaagcg gggcggtatt tcttttccac 600
tcacaccggc cagcgccatg cctttctatg tctcacgcac aagcatccct ctacgtcatc 660
cacgcccgcc tccacactcc ccccgctccg caccgttccc acatagtcgc caccgccatg 720
tccccgctcc cgccccc 737

<210> 1010
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1010
Met Pro Val Trp Leu Gly Gly Thr Phe Ala Pro Leu Cys Leu Ala Cys
1 5 10 15
Arg Ile Ser Asp Asp Phe Gly Glu Cys Cys Cys Ala Pro Tyr Leu Pro
20 25 30

```
Gly Gly Leu His Ser Ile Arg Thr Gly Met Arg Glu Arg Tyr His Ile
        35                  40                  45
Gln Gly Ser Val Gly His Asp Trp Ala Ala Leu Thr Phe Trp Leu Pro
    50                  55                  60
Cys Ala Leu Cys Gln Met Ala Arg Glu Leu Lys Ile Arg Glu  *
 65                 70                  75          78


     <210> 1011
     <211> 83
     <212> PRT
     <213> Homo sapiens


     <400> 1011
Met Ser Leu Pro Trp Thr Phe Thr Val Leu Ile Leu Ala Pro Ser Leu
  1               5                 10                  15
Ser Gly Ser Leu Ser Gly Lys Ser Ser Thr Cys Ala Pro Ala Pro Ser
            20                  25                  30
Ala Pro Gly Ser Arg Ser Ser Gly Pro Arg Arg Asn His His Trp Ile
        35                  40                  45
Ser Arg Tyr Thr Glu Ala Glu Pro Leu Trp Lys Ala Gln Asp Ile Ser
    50                  55                  60
Thr Phe Cys Pro Ser Val Ala Val Thr Phe Arg Gly Asn Ser Val Asn
 65                 70                  75                      80
Phe Ala  *
    82


     <210> 1012
     <211> 131
     <212> PRT
     <213> Homo sapiens


     <400> 1012
Met Ala Ser Glu Val Val Cys Gly Leu Ile Phe Arg Leu Leu Leu Pro
  1               5                 10                  15
Ile Cys Leu Ala Val Ala Cys Ala Phe Arg Tyr Asn Gly Leu Ser Phe
            20                  25                  30
Val Tyr Leu Ile Tyr Leu Leu Leu Ile Pro Leu Phe Ser Glu Pro Thr
        35                  40                  45
Lys Thr Thr Met Gln Gly His Thr Gly Arg Leu Leu Lys Ser Leu Cys
    50                  55                  60
Phe Ile Ser Leu Ser Phe Leu Leu Leu His Ile Ile Phe His Ile Thr
 65                 70                  75                      80
Leu Val Ser Leu Glu Ala Gln His Arg Ile Ala Pro Gly Tyr Asn Cys
                85                  90                  95
Ser Thr Trp Glu Lys Thr Phe Arg Gln Ile Gly Phe Glu Ser Leu Lys
            100                 105                 110
Gly Ala Asp Ala Gly Asn Gly Ile Arg Val Leu Val Pro Asp Ile Gly
        115                 120                 125
Met Val Ile
    130 131
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<210> 1013
<211> 231
<212> PRT
<213> Homo sapiens

<400> 1013
Met Ile Gly Thr Ile Phe Leu Trp Ile Phe Trp Pro Ser Phe Asn Ala
1 5 10 15
Ala Leu Thr Ala Leu Gly Ala Gly Gln His Arg Thr Ala Leu Asn Thr
20 25 30
Tyr Tyr Ser Leu Ala Ala Ser Thr Leu Gly Thr Phe Ala Leu Ser Ala
35 40 45
Leu Val Gly Glu Asp Gly Arg Leu Asp Met Val His Ile Gln Asn Ala
50 55 60
Ala Leu Ala Gly Gly Val Val Val Gly Thr Ser Ser Glu Met Met Leu
65 70 75 80
Thr Pro Phe Gly Ala Leu Ala Ala Gly Phe Leu Ala Gly Thr Val Ser
85 90 95
Thr Leu Gly Tyr Lys Phe Phe Thr Pro Ile Leu Glu Ser Lys Phe Lys
100 105 110
Val Gln Asp Thr Cys Gly Val His Asn Leu His Gly Met Pro Gly Val
115 120 125
Leu Gly Ala Leu Leu Gly Val Leu Val Ala Gly Leu Ala Thr His Glu
130 135 140
Ala Tyr Gly Asp Gly Leu Glu Ser Val Phe Pro Leu Ile Ala Glu Gly
145 150 155 160
Gln Arg Ser Ala Thr Ser Gln Ala Met His Gln Leu Phe Gly Leu Phe
165 170 175
Val Thr Leu Met Phe Ala Ser Val Gly Gly Gly Leu Gly Gly Ile Ile
180 185 190
Leu Val Leu Cys Leu Leu Asp Pro Cys Ala Leu Trp His Trp Val Ala
195 200 205
Pro Ser Ser Met Val Gly Gly Arg Glu Ala Ser Gln Ile Leu Pro Tyr
210 215 220
His His Gln Gly Ser Cys *
225 230

<210> 1014
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1014
Met Cys Glu Ile Ala Asp Leu Trp Ile Gly Leu Leu Trp Leu Phe Phe
1 5 10 15
Val Ile Tyr Cys Phe Ser Phe Asn Ser Leu Thr Thr Val Cys Arg Ala
20 25 30
Ala Val Val Phe Trp Arg Ser Ala Pro Asp Pro Gly Ala Leu Gly Phe
35 40 45
Phe Ser Ile Trp Lys Tyr His Gln Leu Arg Leu *
50 55 59

<210> 1015

<211> 112
<212> PRT
<213> Homo sapiens

<400> 1015
Met Met Thr Val Tyr Pro Leu Leu Gly Tyr Leu Ala Arg Val Gln Leu
1 5 10 15
Leu Gly His Ile Phe Gly Asp Ile Tyr Pro Ser Ile Phe His Val Leu
20 25 30
Ile Leu Asn Leu Ile Ile Val Gly Ala Gly Val Ile Met Ala Cys Phe
35 40 45
Tyr Pro Asn Ile Gly Gly Ile Ile Arg Tyr Ser Gly Ala Ala Cys Gly
50 55 60
Leu Ala Phe Val Phe Ile Tyr Pro Ser Leu Ile Tyr Ile Ile Ser Leu
65 70 75 80
His Gln Glu Glu Arg Leu Thr Trp Pro Lys Leu Ile Phe His Val Phe
85 90 95
Ile Ile Ile Leu Gly Val Ala Asn Leu Ile Val Gln Phe Phe Met *
100 105 110 111

<210> 1016
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1016
Met Ala Lys Tyr Ala Ser Met Thr Phe Lys Leu Phe Ser Leu Cys Val
1 5 10 15
Cys Met Tyr Ile His Ala Cys Thr His Thr His Ile Ser His Thr Asp
20 25 30
Ile Asp Ile Lys Gln Phe Tyr Ala Gln Glu Tyr Gln Gly Gln Pro Lys
35 40 45
Asp Lys Thr Asn Arg Ser Val Ile Tyr Cys Val Phe Asn Phe Ser Thr
50 55 60
Tyr Phe Tyr *
65 67

<210> 1017
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1017
Met Arg Leu Leu Phe Ser Cys Arg Gly Arg Gly Met Phe Leu Phe Arg
1 5 10 15
Arg Arg Met Leu Pro Ser Arg Asp Arg Tyr Tyr Lys Asp Val Glu Leu
20 25 30
Ile Phe Asn Tyr Leu Gly Phe Leu Ile Val Ser Gly Leu Leu Asp Leu
35 40 45
Ile Phe *
50

<210> 1018
<211> 127
<212> PRT
<213> Homo sapiens

<400> 1018
```
Met Leu Arg Phe Tyr Leu Ile Ala Gly Gly Ile Pro Leu Ile Ile Cys
 1               5                  10                  15
Gly Ile Thr Ala Ala Val Asn Ile His Asn Tyr Arg Asp His Ser Pro
            20                  25                  30
Tyr Cys Trp Leu Val Trp Arg Pro Ser Leu Gly Ala Phe Tyr Ile Pro
        35                  40                  45
Val Ala Leu Ile Leu Leu Ile Thr Trp Ile Tyr Phe Leu Cys Ala Gly
    50                  55                  60
Leu Arg Leu Arg Gly Pro Leu Ala Gln Asn Pro Lys Ala Gly Asn Ser
 65                  70                  75                  80
Arg Ala Ser Leu Glu Ala Gly Glu Glu Leu Arg Gly Ser Thr Arg Leu
                85                  90                  95
Arg Gly Ser Gly Pro Leu Leu Ser Asp Ser Gly Ser Leu Leu Ala Thr
            100                 105                 110
Gly Ser Ala Arg Val Gly Thr Pro Gly Pro Pro Glu Asp Gly Asp
        115                 120                 125     127
```

<210> 1019
<211> 188
<212> PRT
<213> Homo sapiens

<400> 1019
```
Met Gly Ser Ser Arg Leu Ala Ala Leu Leu Leu Pro Leu Leu Leu Ile
 1               5                  10                  15
Val Ile Asp Leu Ser Asp Ser Ala Gly Ile Gly Phe Arg His Leu Pro
            20                  25                  30
His Trp Asn Thr Arg Cys Pro Leu Ala Ser His Thr Asp Asp Ser Phe
        35                  40                  45
Thr Gly Ser Ser Ala Tyr Ile Pro Cys Arg Thr Trp Trp Ala Leu Phe
    50                  55                  60
Ser Thr Lys Pro Trp Cys Val Arg Val Trp His Cys Ser Arg Cys Leu
 65                  70                  75                  80
Cys Gln His Leu Leu Ser Gly Gly Ser Gly Leu Gln Arg Gly Leu Phe
                85                  90                  95
His Leu Leu Val Gln Lys Ser Lys Lys Ser Ser Thr Phe Lys Phe Tyr
            100                 105                 110
Arg Arg His Lys Met Pro Ala Pro Ala Gln Arg Lys Leu Leu Pro Arg
        115                 120                 125
Arg His Leu Ser Glu Lys Ser His His Ile Ser Ile Pro Ser Pro Asp
    130                 135                 140
Ile Ser His Lys Gly Leu Arg Ser Lys Arg Thr Pro Pro Phe Gly Ser
145                 150                 155                 160
Arg Asp Met Gly Lys Ala Phe Pro Lys Trp Asp Ser Pro Thr Pro Gly
                165                 170                 175
Gly Asp Arg Pro Ser Ser Phe Glu Leu Leu Pro  *
            180                 185     187
```

<210> 1020
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1020
Met Ile Leu Leu Cys Pro Gly Leu Thr Asp Leu Ser Val Phe Leu Phe
1 5 10 15
Ser Leu Thr Ile Gly His Phe Ser Arg Val Arg Gly Gln Thr Ile Thr
20 25 30
Ala Cys Pro Ser Ser Arg Ile Pro Ala Gly Phe Gln Asp Ile Val Gln
35 40 45
Gly Ser Ala Asn Ser Gly Pro Arg Ala Leu Ala Arg Cys Pro Cys Leu
50 55 60 64
*

<210> 1021
<211> 136
<212> PRT
<213> Homo sapiens

<400> 1021
Met Pro Gly Phe Lys Phe Cys Ser Ser Leu Arg Phe Leu Tyr Leu Ile
1 5 10 15
Asn Phe Pro Ile Gly Lys Phe Val Cys Leu Ala Ile Leu Leu Pro His
20 25 30
Phe Pro Leu Leu Ser Cys Cys Pro Leu Gln Asp His Leu Asp Phe Pro
35 40 45
Gly Lys Glu Ser Arg Tyr Ser Gly Ser Cys Trp Leu Pro Ser Tyr Ser
50 55 60
Leu Ser Val Ala Gly Ser Pro Leu Gly His Leu Pro Asn Thr Tyr Met
65 70 75 80
His Thr Pro Arg Thr Phe Ser Leu Leu Pro Ile Pro His Pro Ser Val
85 90 95
Asn Trp Asp Ser Phe Lys Pro Phe Ser Ile Arg Glu Ala Leu Ala Thr
100 105 110
Val Glu Ser Leu Gly Arg Gln Ala Phe Pro Asn Thr Pro Thr Thr Trp
115 120 125
Ala Phe Thr Leu His Leu Ser *
130 135

<210> 1022
<211> 186
<212> PRT
<213> Homo sapiens

<400> 1022
Met Ala Gly Pro Arg Pro Arg Trp Arg Asp Gln Leu Leu Phe Met Ser

```
 1               5                   10                  15
Ile Ile Val Leu Val Ile Val Val Ile Cys Leu Met Leu Tyr Ala Leu
            20                  25                  30
Leu Trp Glu Ala Gly Asn Leu Thr Asp Leu Pro Asn Leu Arg Ile Gly
        35                  40                  45
Phe Tyr Asn Phe Cys Leu Trp Asn Glu Asp Thr Ser Thr Leu Gln Cys
    50                  55                  60
His Gln Phe Pro Glu Leu Glu Ala Leu Gly Val Pro Arg Val Gly Leu
65                  70                  75                  80
Gly Leu Ala Arg Leu Gly Val Tyr Gly Ser Leu Val Leu Thr Leu Phe
                85                  90                  95
Ala Pro Gln Pro Leu Leu Leu Ala Gln Cys Asn Ser Asp Glu Arg Ala
            100                 105                 110
Trp Arg Leu Ala Val Gly Phe Leu Ala Val Ser Ser Val Leu Leu Ala
        115                 120                 125
Gly Gly Leu Gly Leu Phe Leu Ser Tyr Val Trp Lys Trp Val Arg Leu
    130                 135                 140
Ser Leu Pro Gly Pro Gly Phe Leu Ala Leu Gly Ser Ala Gln Ala Leu
145                 150                 155                 160
Leu Ile Leu Leu Leu Ile Ala Met Ala Val Phe Pro Leu Arg Ala Glu
                165                 170                 175
Arg Ala Glu Ser Lys Leu Glu Ser Cys  *
            180                 185
```

<210> 1023
<211> 186
<212> PRT
<213> Homo sapiens

<400> 1023

```
Met Ala Gly Pro Arg Pro Arg Trp Arg Asp Gln Leu Leu Phe Met Ser
 1               5                   10                  15
Ile Ile Val Leu Val Ile Val Val Ile Cys Leu Met Leu Tyr Ala Leu
            20                  25                  30
Leu Trp Glu Ala Gly Asn Leu Thr Asp Leu Pro Asn Leu Arg Ile Gly
        35                  40                  45
Phe Tyr Asn Phe Cys Leu Trp Asn Glu Asp Thr Ser Thr Leu Gln Cys
    50                  55                  60
His Gln Phe Pro Glu Leu Glu Ala Leu Gly Val Pro Arg Val Gly Leu
65                  70                  75                  80
Gly Leu Ala Arg Leu Gly Val Tyr Gly Ser Leu Val Leu Thr Leu Phe
                85                  90                  95
Ala Pro Gln Pro Leu Leu Leu Ala Gln Cys Asn Ser Asp Glu Arg Ala
            100                 105                 110
Trp Arg Leu Ala Val Gly Phe Leu Ala Val Ser Ser Val Leu Leu Ala
        115                 120                 125
Gly Gly Leu Gly Leu Phe Leu Ser Tyr Val Trp Lys Trp Val Arg Leu
    130                 135                 140
Ser Leu Pro Gly Pro Gly Phe Leu Ala Leu Gly Ser Ala Gln Ala Leu
145                 150                 155                 160
Leu Ile Leu Leu Leu Ile Ala Met Ala Val Phe Pro Leu Arg Ala Glu
                165                 170                 175
Arg Ala Glu Ser Lys Leu Glu Ser Cys  *
            180                 185
```

<210> 1024
<211> 73
<212> PRT
<213> Homo sapiens

<400> 1024
Met Val Cys Leu Val Gly Phe Leu Glu Leu Ile Leu Tyr Val Tyr Arg
1 5 10 15
Phe Arg Gln Ser Leu Ala Leu Ser His Arg Met Glu Cys Asn Gly Thr
20 25 30
Ile Leu Ala His Cys Asn Leu Arg Leu Pro Gly Ser Ser Asp Ser Pro
35 40 45
Thr Ser Ala Ser Arg Val Ala Gly Ile Thr Gly Thr Arg His His Ala
50 55 60
Arg Val Ile Phe Phe Val Phe Leu *
65 70 72

<210> 1025
<211> 67
<212> PRT
<213> Homo sapiens

<400> 1025
Met Phe Tyr Lys Leu Val Leu Trp Phe Trp Trp Cys Leu Thr Thr Arg
1 5 10 15
Gly Asn Leu Leu Cys Leu Ala Cys Ile Phe Ala Thr Leu Ser Leu Glu
20 25 30
Ser Lys Asn Phe Pro Thr Leu Gln Ala Thr Leu Leu Ile Arg Gln His
35 40 45
Phe Ile Tyr Lys Thr Phe Val Trp Pro Thr Val Cys His Asp Leu Cys
50 55 60
Ser Leu *
65 66

<210> 1026
<211> 67
<212> PRT
<213> Homo sapiens

<400> 1026
Met Gln Ala Gly Ser Ala Leu Trp His Leu Trp Ala Glu Gly Arg Cys
1 5 10 15
Trp Leu Trp Ala Gly Phe Gly Asn Phe Gly Glu Arg Pro His Leu Lys
20 25 30
Thr His Thr Asp Tyr Pro Gly Pro Thr Glu Ala Ser Cys Ile Gln Pro
35 40 45
Tyr Phe Pro Ser Arg Ile Met Leu Ser Ala Thr Pro Leu Glu Gly Tyr
50 55 60
Val Phe *
65 66

<210> 1027
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1027
Met Leu Cys Val Trp Ile Lys Val Leu Phe Leu Leu Ile Ala Glu Ser
1 5 10 15
Asn Thr Trp Leu Leu Ser Pro Arg Thr Lys Asp Val Leu Lys Ser Glu
20 25 30
Pro Thr Gln Ile Tyr Pro His Thr Ser Arg Lys Gln Phe Lys Lys Pro
35 40 45
Gln Glu Ser Lys His Ser Phe Ile Gly Tyr *
50 55 58

<210> 1028
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1028
Met Phe Gln Val Gly Gly Arg Val Phe Lys Arg Cys Ile Phe Ser Phe
1 5 10 15
Cys Cys Cys His Phe Ile Gly Leu Gly Leu Gly Val Cys Phe Ser Ser
20 25 30
Leu Asn Gly Thr Arg Met Phe Ala Asp Ser Tyr Ser Val *
35 40 45

<210> 1029
<211> 61
<212> PRT
<213> Homo sapiens

<400> 1029
Met Ala Phe Arg Thr Cys Phe Leu Ser Cys Leu Thr Val Val Lys Val
1 5 10 15
Cys Ser Lys Ala Ser Pro Ser Phe Ser Thr Gln Gln Pro Cys Val Thr
20 25 30
Thr Lys Val Glu Leu Ser Leu Ile Cys Cys Cys Phe Ser Ser Lys Leu
35 40 45
Pro Asn Lys Ala Lys Asn Thr Leu Val Phe Tyr Ser *
50 55 60

<210> 1030
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1030
Met Trp Leu Arg Lys Cys Leu Leu Gly Leu Ser Leu Ile Ser Phe Arg
1 5 10 15
Val Cys Gly Pro Leu Ile Ala Leu Trp Val Val Ser Asp Ser Ser Ile
20 25 30
Arg Arg Leu Asn Pro Leu Val Val Phe Leu Cys Val Cys Ala Glu Leu
35 40 45
Gly *
49

<210> 1031
<211> 152
<212> PRT
<213> Homo sapiens

<400> 1031
Met Ile Val Tyr Trp Val Leu Met Ser Asn Phe Leu Phe Asn Thr Gly
1 5 10 15
Lys Phe Ile Phe Asn Phe Ile His His Ile Asn Asp Thr Asp Thr Ile
20 25 30
Leu Ser Thr Asn Asn Ser Asn Pro Val Ile Cys Pro Ser Ala Gly Ser
35 40 45
Gly Gly His Pro Asp Asn Ser Ser Met Ile Phe Tyr Ala Asn Asp Thr
50 55 60
Gly Ala Gln Gln Phe Glu Lys Trp Trp Asp Lys Ser Arg Thr Val Pro
65 70 75 80
Phe Tyr Leu Val Gly Leu Leu Leu Pro Leu Leu Asn Phe Lys Ser Pro
85 90 95
Ser Phe Phe Ser Lys Phe Asn Ile Leu Gly Ile Asn Asn Gln Val Ile
100 105 110
Leu Pro Gly Val Thr Glu Met Pro Gly Tyr Cys Pro Phe Leu Leu Pro
115 120 125
Val Ser Thr Glu Cys Cys Ala Val Ala Thr Ser Tyr Thr Cys Phe Glu
130 135 140
Glu Lys Asn Ile Gly Gln Cys Cys
145 150 152

<210> 1032
<211> 1764
<212> PRT
<213> Homo sapiens

<400> 1032
Met Pro Ser Arg Leu Lys Ala Leu Gly Thr Leu Val Ser His Val Thr
1 5 10 15
Leu Arg Leu Leu Lys Pro Glu Cys Val Leu Asp Lys Ser Trp Cys Gln
20 25 30
Glu Glu Leu Ser Val Ala Val Lys Arg Ala Val Met Leu Leu His Thr
35 40 45
His Thr Ile Thr Ser Arg Val Gly Lys Gly Glu Pro Gly Ala Ala Pro
50 55 60
Leu Ser Ala Pro Ala Phe Ser Leu Val Phe Pro Phe Leu Lys Met Val

65 70 75 80
Leu Thr Glu Met Pro His His Ser Glu Glu Glu Glu Glu Trp Met Ala
85 90 95
Gln Ile Leu Gln Ile Leu Thr Val Gln Ala Gln Leu Arg Ala Ser Pro
100 105 110
Asn Thr Pro Pro Gly Arg Val Asp Glu Asn Gly Pro Glu Leu Leu Pro
115 120 125
Arg Val Ala Met Leu Arg Leu Leu Thr Trp Val Ile Gly Thr Gly Ser
130 135 140
Pro Arg Leu Gln Val Leu Ala Ser Asp Thr Leu Thr Thr Leu Cys Ala
145 150 155 160
Ser Ser Ser Gly Asp Asp Gly Cys Ala Phe Ala Glu Gln Glu Glu Val
165 170 175
Asp Val Leu Leu Cys Ala Leu Gln Ser Pro Cys Ala Ser Val Arg Glu
180 185 190
Thr Val Leu Arg Gly Leu Met Glu Leu His Met Val Leu Pro Ala Pro
195 200 205
Asp Thr Asp Glu Lys Asn Gly Leu Asn Leu Leu Arg Arg Leu Trp Val
210 215 220
Val Lys Phe Asp Lys Glu Glu Glu Ile Arg Lys Leu Ala Glu Arg Leu
225 230 235 240
Trp Ser Met Met Gly Leu Asp Leu Gln Pro Asp Leu Cys Ser Leu Leu
245 250 255
Ile Asp Asp Val Ile Tyr His Glu Ala Ala Val Arg Gln Ala Gly Ala
260 265 270
Glu Ala Leu Ser Gln Ala Val Ala Arg Tyr Gln Arg Gln Ala Ala Glu
275 280 285
Val Met Gly Arg Leu Met Glu Ile Tyr Gln Glu Lys Leu Tyr Arg Pro
290 295 300
Pro Pro Val Leu Asp Ala Leu Gly Arg Val Ile Ser Glu Ser Pro Pro
305 310 315 320
Asp Gln Trp Glu Ala Arg Cys Gly Leu Ala Leu Ala Leu Asn Lys Leu
325 330 335
Ser Gln Tyr Leu Asp Ser Ser Gln Val Lys Pro Leu Phe Gln Phe Phe
340 345 350
Val Pro Asp Ala Leu Asn Asp Arg His Pro Asp Val Arg Lys Cys Met
355 360 365
Leu Asp Ala Ala Leu Ala Thr Leu Asn Thr His Gly Lys Glu Asn Val
370 375 380
Asn Ser Leu Leu Pro Val Phe Glu Glu Phe Leu Lys Asn Ala Pro Asn
385 390 395 400
Asp Ala Ser Tyr Asp Ala Val Arg Gln Ser Val Val Val Leu Met Gly
405 410 415
Ser Leu Ala Lys His Leu Asp Lys Ser Asp Pro Lys Val Lys Pro Ile
420 425 430
Val Ala Lys Leu Ile Ala Ala Leu Ser Thr Pro Ser Gln Gln Val Gln
435 440 445
Glu Ser Val Ala Ser Cys Leu Pro Pro Leu Val Pro Ala Ile Lys Glu
450 455 460
Asp Ala Gly Gly Met Ile Gln Arg Leu Met Gln Gln Leu Leu Glu Ser
465 470 475 480
Asp Lys Tyr Ala Glu Arg Lys Gly Ala Ala Tyr Gly Leu Ala Gly Leu
485 490 495
Val Lys Gly Leu Gly Ile Leu Ser Leu Lys Gln Gln Glu Met Met Ala
500 505 510
Ala Leu Thr Asp Ala Ile Gln Asp Lys Lys Asn Phe Arg Arg Arg Glu
515 520 525
Gly Ala Leu Phe Ala Phe Glu Met Leu Cys Thr Met Leu Gly Lys Leu
530 535 540

Phe Glu Pro Tyr Val Val His Val Leu Pro His Leu Leu Leu Cys Phe
545 550 555 560
Gly Asp Gly Asn Gln Tyr Val Arg Glu Ala Ala Asp Asp Cys Ala Lys
565 570 575
Ala Val Met Ser Asn Leu Ser Ala His Gly Val Lys Leu Val Leu Pro
580 585 590
Ser Leu Leu Ala Ala Leu Glu Glu Glu Ser Trp Arg Thr Lys Ala Gly
595 600 605
Ser Val Glu Leu Leu Gly Ala Met Ala Tyr Cys Ala Pro Lys Gln Leu
610 615 620
Ser Ser Cys Leu Pro Asn Ile Val Pro Lys Leu Thr Glu Val Leu Thr
625 630 635 640
Asp Ser His Val Lys Val Gln Lys Ala Gly Gln Gln Ala Leu Arg Gln
645 650 655
Ile Gly Ser Val Ile Arg Asn Pro Glu Ile Leu Ala Ile Ala Pro Val
660 665 670
Leu Leu Asp Ala Leu Thr Asp Pro Ser Arg Lys Thr Gln Lys Cys Leu
675 680 685
Gln Thr Leu Leu Asp Thr Lys Phe Val His Phe Ile Asp Ala Pro Ser
690 695 700
Leu Ala Leu Ile Met Pro Ile Val Gln Arg Ala Phe Gln Asp Arg Ser
705 710 715 720
Thr Asp Thr Arg Lys Met Ala Ala Gln Ile Ile Gly Asn Met Tyr Ser
725 730 735
Leu Thr Asp Gln Lys Asp Leu Ala Pro Tyr Leu Pro Ser Val Thr Pro
740 745 750
Gly Leu Lys Ala Ser Leu Leu Asp Pro Val Pro Glu Val Arg Thr Val
755 760 765
Ser Ala Lys Ala Leu Gly Ala Met Val Lys Gly Met Gly Glu Ser Cys
770 775 780
Phe Glu Asp Leu Leu Pro Trp Leu Met Glu Thr Leu Thr Tyr Glu Gln
785 790 795 800
Ser Ser Val Asp Arg Ser Gly Ala Ala Gln Gly Leu Ala Glu Val Met
805 810 815
Ala Gly Leu Gly Val Glu Lys Leu Glu Lys Leu Met Pro Glu Ile Val
820 825 830
Ala Thr Ala Ser Lys Val Asp Ile Ala Pro His Val Arg Asp Gly Tyr
835 840 845
Ile Met Met Phe Asn Tyr Leu Pro Ile Thr Phe Gly Asp Lys Phe Thr
850 855 860
Pro Tyr Val Gly Pro Ile Ile Pro Cys Ile Leu Lys Ala Leu Ala Asp
865 870 875 880
Glu Asn Glu Phe Val Arg Asp Thr Ala Leu Arg Ala Gly Gln Arg Val
885 890 895
Ile Ser Met Tyr Ala Glu Thr Ala Ile Ala Leu Leu Leu Pro Gln Leu
900 905 910
Glu Gln Gly Leu Phe Asp Asp Leu Trp Arg Ile Arg Phe Ser Ser Val
915 920 925
Gln Leu Leu Gly Asp Leu Leu Phe His Ile Ser Gly Val Thr Gly Lys
930 935 940
Met Thr Thr Glu Thr Ala Ser Glu Asp Asp Asn Phe Gly Thr Ala Gln
945 950 955 960
Ser Asn Lys Ala Ile Ile Thr Ala Leu Gly Val Glu Arg Arg Asn Arg
965 970 975
Val Leu Ala Gly Leu Tyr Met Gly Arg Ser Asp Thr Gln Leu Val Val
980 985 990
Arg Gln Ala Ser Leu His Val Trp Lys Ile Val Val Ser Asn Thr Pro
995 1000 1005
Arg Thr Leu Arg Glu Ile Leu Pro Thr Leu Phe Gly Leu Leu Leu Gly

1010 1015 1020
Phe Leu Ala Ser Thr Cys Ala Asp Lys Arg Thr Ile Ala Ala Arg Thr
1025 1030 1035 1040
Leu Gly Asp Leu Val Arg Lys Leu Gly Glu Lys Ile Leu Pro Glu Ile
1045 1050 1055
Ile Pro Ile Leu Glu Glu Gly Leu Arg Ser Gln Lys Ser Asp Glu Arg
1060 1065 1070
Gln Gly Val Cys Ile Gly Leu Ser Glu Ile Met Lys Ser Thr Ser Arg
1075 1080 1085
Asp Ala Val Leu Tyr Phe Ser Glu Ser Leu Val Pro Thr Ala Arg Lys
1090 1095 1100
Ala Leu Cys Asp Pro Leu Glu Glu Val Arg Glu Ala Ala Ala Lys Thr
1105 1110 1115 1120
Phe Glu Gln Leu His Ser Thr Ile Gly His Gln Ala Leu Glu Asp Ile
1125 1130 1135
Leu Pro Phe Leu Leu Lys Gln Leu Asp Asp Glu Glu Val Ser Glu Phe
1140 1145 1150
Ala Leu Asp Gly Leu Lys Gln Val Met Ala Ile Lys Ser Arg Val Val
1155 1160 1165
Leu Pro Tyr Leu Val Pro Lys Leu Thr Thr Pro Pro Val Asn Thr Arg
1170 1175 1180
Val Leu Ala Phe Leu Ser Ser Val Ala Gly Asp Ala Leu Thr Arg His
1185 1190 1195 1200
Leu Gly Val Ile Leu Pro Ala Val Met Leu Ala Leu Lys Glu Lys Leu
1205 1210 1215
Gly Thr Pro Asp Glu Gln Leu Glu Met Ala Asn Cys Gln Ala Val Ile
1220 1225 1230
Leu Ser Val Glu Asp Asp Thr Gly His Arg Ile Ile Ile Glu Asp Leu
1235 1240 1245
Leu Glu Ala Thr Arg Ser Pro Glu Val Gly Met Arg Gln Ala Ala Ala
1250 1255 1260
Ile Ile Leu Asn Ile Tyr Cys Ser Arg Ser Lys Ala Asp Tyr Thr Ser
1265 1270 1275 1280
His Leu Arg Ser Leu Val Ser Gly Leu Ile Arg Leu Phe Asn Asp Ser
1285 1290 1295
Ser Pro Val Val Leu Glu Glu Ser Trp Asp Ala Leu Asn Ala Ile Thr
1300 1305 1310
Lys Lys Leu Asp Ala Gly Asn Gln Leu Ala Leu Ile Glu Glu Leu His
1315 1320 1325
Lys Glu Ile Arg Leu Ile Gly Asn Glu Ser Lys Gly Glu His Val Pro
1330 1335 1340
Gly Phe Cys Leu Pro Lys Lys Gly Val Thr Ser Ile Leu Pro Val Leu
1345 1350 1355 1360
Arg Glu Gly Val Leu Thr Gly Ser Pro Glu Gln Lys Glu Glu Ala Ala
1365 1370 1375
Lys Ala Leu Gly Leu Val Ile Arg Leu Thr Ser Ala Asp Ala Leu Arg
1380 1385 1390
Pro Ser Val Val Ser Ile Thr Gly Pro Leu Ile Arg Ile Leu Gly Asp
1395 1400 1405
Arg Phe Ser Trp Asn Val Lys Ala Ala Leu Leu Glu Thr Leu Ser Leu
1410 1415 1420
Leu Leu Ala Lys Val Gly Ile Ala Leu Lys Pro Phe Leu Pro Gln Leu
1425 1430 1435 1440
Gln Thr Thr Phe Thr Lys Ala Leu Gln Asp Ser Asn Arg Gly Val Arg
1445 1450 1455
Leu Lys Ala Ala Asp Ala Leu Gly Lys Leu Ile Ser Ile His Ile Lys
1460 1465 1470
Val Asp Pro Leu Phe Thr Glu Leu Leu Asn Gly Ile Arg Ala Met Glu
1475 1480 1485

Asp Pro Gly Val Arg Asp Thr Met Leu Gln Ala Leu Arg Phe Val Ile
1490 1495 1500
Gln Gly Ala Gly Ala Lys Val Asp Ala Val Ile Arg Lys Asn Ile Val
1505 1510 1515 1520
Ser Leu Leu Leu Ser Met Leu Gly His Asp Glu Asp Asn Thr Arg Ile
1525 1530 1535
Ser Ser Ala Gly Cys Leu Gly Glu Leu Cys Ala Phe Leu Thr Glu Glu
1540 1545 1550
Glu Leu Ser Ala Val Leu Gln Gln Cys Leu Leu Ala Asp Val Ser Gly
1555 1560 1565
Ile Asp Trp Met Val Arg His Gly Arg Ser Leu Ala Leu Ser Val Ala
1570 1575 1580
Val Asn Val Ala Pro Gly Arg Leu Cys Ala Gly Arg Tyr Ser Ser Asp
1585 1590 1595 1600
Val Gln Glu Met Ile Leu Ser Ser Ala Thr Ala Asp Arg Ile Pro Ile
1605 1610 1615
Ala Val Ser Gly Val Arg Gly Met Gly Phe Leu Met Arg His His Ile
1620 1625 1630
Glu Thr Gly Gly Gly Gln Leu Pro Ala Lys Leu Ser Ser Leu Phe Val
1635 1640 1645
Lys Cys Leu Gln Asn Pro Ser Ser Asp Ile Arg Leu Val Ala Glu Lys
1650 1655 1660
Met Ile Trp Trp Ala Asn Lys Asp Pro Leu Pro Pro Leu Asp Pro Gln
1665 1670 1675 1680
Ala Ile Lys Pro Ile Leu Lys Ala Leu Leu Asp Asn Thr Lys Asp Lys
1685 1690 1695
Asn Thr Val Val Arg Ala Tyr Ser Asp Gln Ala Ile Val Asn Leu Leu
1700 1705 1710
Lys Met Arg Gln Gly Glu Glu Val Phe Gln Ser Leu Ser Lys Ile Leu
1715 1720 1725
Asp Val Ala Ser Leu Glu Val Leu Asn Glu Val Asn Arg Arg Ser Leu
1730 1735 1740
Lys Lys Leu Ala Ser Gln Ala Asp Ser Thr Glu Gln Val Asp Asp Thr
1745 1750 1755 1760
Ile Leu Thr *
1763

<210> 1033
<211> 151
<212> PRT
<213> Homo sapiens

<400> 1033
Met Asn Arg Arg Ala Ser Gln Met Leu Leu Met Phe Leu Leu Ala Ile
1 5 10 15
Cys Leu Leu Ala Ile Ile Phe Val Pro Gln Glu Met Gln Met Leu Arg
20 25 30
Glu Val Leu Ala Thr Leu Gly Leu Gly Ala Ser Ala Leu Ala Asn Thr
35 40 45
Leu Ala Phe Ala His Gly Asn Glu Val Ile Pro Thr Ile Ile Arg Ala
50 55 60
Arg Ala Met Gly Ile Asn Ala Thr Phe Ala Asn Ile Ala Gly Ala Leu
65 70 75 80
Ala Pro Leu Met Met Ile Leu Ser Val Tyr Ser Pro Pro Leu Pro Trp
85 90 95
Ile Ile Tyr Gly Val Phe Pro Phe Ile Ser Gly Phe Ala Phe Leu Leu

```
            100                 105                 110
Leu Pro Glu Thr Arg Asn Lys Pro Leu Phe Asp Thr Ile Gln Asp Glu
        115                 120                 125
Lys Asn Glu Arg Lys Asp Pro Arg Glu Pro Lys Gln Glu Asp Pro Arg
    130                 135                 140
Val Glu Val Thr Gln Phe  *
145                 150
```

<210> 1034
<211> 149
<212> PRT
<213> Homo sapiens

<400> 1034

```
Met Ala Leu Leu Leu Pro Arg Trp Phe Arg Glu Ala Pro Val Leu Phe
 1               5                  10                  15
Ser Thr Gly Trp Ser Pro Leu Asp Val Leu Leu His Ser Leu Leu Thr
            20                  25                  30
Gln Pro Ile Phe Leu Ala Gly Leu Ser Gly Phe Leu Leu Glu Asn Thr
        35                  40                  45
Ile Pro Gly Thr Gln Leu Glu Arg Gly Leu Gly Gln Gly Leu Pro Ser
    50                  55                  60
Pro Phe Thr Ala Gln Glu Ala Arg Met Pro Gln Lys Pro Arg Glu Lys
65                  70                  75                  80
Ala Ala Gln Val Tyr Arg Leu Pro Phe Pro Ile Gln Asn Leu Cys Pro
                85                  90                  95
Cys Ile Pro Gln Pro Leu His Cys Leu Cys Pro Leu Pro Glu Asp Pro
            100                 105                 110
Gly Asp Glu Glu Gly Gly Ser Ser Glu Pro Glu Glu Met Ala Asp Leu
        115                 120                 125
Leu Pro Gly Ser Gly Glu Pro Cys Pro Glu Ser Thr Arg Glu Gly Val
    130                 135                 140
Arg Ser Gln Lys  *
145         148
```

<210> 1035
<211> 88
<212> PRT
<213> Homo sapiens

<400> 1035

```
Met Gly Ile Ala Leu Leu Gln Ile Phe Gly Ile Cys Leu Ala Gln Asn
 1               5                  10                  15
Leu Val Ser Asp Ile Lys Ala Val Lys Ala Asn Trp Ser Lys Trp Asn
            20                  25                  30
Asp Asp Phe Glu Asn His Trp Leu Thr Pro Thr Ile Ser Glu Val Leu
        35                  40                  45
Ser Thr Ala Gly Pro Gln Gln Asn Ser Leu Thr Gly Ala Pro Gly Pro
    50                  55                  60
Ala Pro Pro Ser Arg His Val Phe Phe Gly Leu Gly Gly Leu Tyr Pro
65                  70                  75                  80
Glu Pro Thr Phe Lys Asn Trp  *
                85          87
```

<210> 1036
<211> 96
<212> PRT
<213> Homo sapiens

<400> 1036
Met Val Val Leu Ile Pro Val Ser Trp Val Ala Asn Ala Ile Ile Arg
1 5 10 15
Asp Phe Tyr Asn Ser Ile Val Asn Val Ala Gln Lys Arg Glu Leu Gly
20 25 30
Glu Ala Leu Tyr Leu Gly Trp Thr Thr Ala Leu Val Leu Ile Val Gly
35 40 45
Gly Ala Leu Phe Cys Cys Val Phe Cys Cys Asn Glu Lys Ser Ser Ser
50 55 60
Tyr Arg Tyr Ser Ile Pro Ser His Arg Thr Thr Gln Lys Ser Tyr His
65 70 75 80
Thr Gly Lys Lys Ser Pro Ser Val Tyr Ser Arg Ser Gln Tyr Val *
85 90 95

<210> 1037
<211> 139
<212> PRT
<213> Homo sapiens

<400> 1037
Met Ala Leu Ser Trp Met Thr Ile Val Val Pro Leu Leu Thr Phe Glu
1 5 10 15
Ile Leu Leu Val His Lys Leu Asp Gly His Asn Ala Phe Ser Cys Ile
20 25 30
Pro Ile Phe Val Pro Leu Trp Leu Ser Leu Ile Thr Leu Met Ala Thr
35 40 45
Thr Phe Gly Gln Lys Gly Gly Asn His Trp Trp Phe Gly Ile Arg Lys
50 55 60
Asp Phe Cys Gln Phe Leu Leu Glu Ile Phe Pro Phe Leu Arg Glu Tyr
65 70 75 80
Gly Asn Ile Ser Tyr Asp Leu His His Glu Asp Asn Glu Glu Thr Glu
85 90 95
Glu Thr Pro Val Pro Glu Pro Pro Lys Ile Ala Pro Met Phe Arg Lys
100 105 110
Lys Ala Arg Val Val Ile Thr Gln Ser Pro Gly Lys Tyr Val Leu Pro
115 120 125
Pro Pro Lys Leu Asn Ile Glu Met Pro Asp *
130 135 138

<210> 1038
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1038
```
Met Val Leu Ser Gly Ile His Trp Tyr Ser Val Leu Leu Leu Ala Val
 1               5                  10                  15
Glu Phe Cys Arg Tyr Cys Pro Leu Arg Tyr Arg Cys Ser Thr Phe Ser
            20                  25                  30
Ser Trp Ala Arg Val Ser Ser Thr Pro Gln Ala Ser Ser Pro Val Ala
        35                  40                  45
Leu Thr Met Leu Ser Ser Arg Gly Arg Ser Glu Gly Gly Ala Leu  *
    50                  55                  60          63
```

<210> 1039
<211> 286
<212> PRT
<213> Homo sapiens

<400> 1039
```
Met Met Leu Gly Pro Val Thr Leu His Leu Val Gly His Leu Leu Ala
 1               5                  10                  15
Phe Leu Asp Leu Leu Cys Pro Arg Gly Pro Ile His Ser Ile Leu Pro
            20                  25                  30
Met Thr Phe Glu Ala Val Lys Gln Asp His Gly Phe Met Leu Tyr Arg
        35                  40                  45
Thr Tyr Met Thr His Thr Ile Phe Glu Pro Thr Pro Phe Trp Val Pro
    50                  55                  60
Asn Asn Gly Val His Asp Arg Ala Tyr Val Met Val Asp Gly Val Phe
65                  70                  75                  80
Gln Gly Val Val Glu Arg Asn Met Arg Asp Lys Leu Phe Leu Thr Gly
                85                  90                  95
Lys Leu Gly Ser Lys Leu Asp Ile Leu Val Glu Asn Met Gly Arg Leu
            100                 105                 110
Ser Phe Gly Ser Asn Ser Ser Asp Phe Lys Gly Leu Leu Lys Pro Pro
        115                 120                 125
Ile Leu Gly Gln Thr Ile Leu Thr Gln Trp Met Met Phe Pro Leu Lys
    130                 135                 140
Ile Asp Asn Leu Val Lys Trp Trp Phe Pro Leu Gln Leu Pro Lys Trp
145                 150                 155                 160
Pro Tyr Pro Gln Ala Pro Ser Gly Pro Thr Phe Tyr Ser Lys Thr Phe
                165                 170                 175
Pro Ile Leu Gly Ser Val Gly Asp Thr Phe Leu Tyr Leu Pro Gly Trp
            180                 185                 190
Thr Lys Gly Gln Val Trp Ile Asn Gly Phe Asn Leu Gly Arg Tyr Trp
        195                 200                 205
Thr Lys Gln Gly Pro Gln Gln Thr Leu Tyr Val Pro Arg Phe Leu Leu
    210                 215                 220
Phe Pro Arg Gly Ala Leu Asn Lys Ile Thr Leu Leu Glu Leu Glu Asp
225                 230                 235                 240
Val Pro Leu Gln Pro Gln Val Gln Phe Leu Asp Lys Pro Ile Leu Asn
                245                 250                 255
Ser Thr Ser Thr Leu His Arg Thr His Ile Asn Ser Leu Ser Ala Asp
            260                 265                 270
Thr Leu Ser Ala Ser Glu Pro Met Glu Leu Ser Gly His  *
        275                 280                 285
```

<210> 1040

<211> 96
<212> PRT
<213> Homo sapiens

<400> 1040
Met His Ala His Ser Ala Ser Leu Trp Val Ala Phe Phe Tyr Arg Ser
1 5 10 15
Pro Phe Leu Phe Phe Thr Thr Gly Pro Pro Pro Pro Thr Ser Ser Ser
20 25 30
Pro Ala Gly Leu Pro Leu Leu Glu Ser Thr Val Asp Ala Ser Arg Pro
35 40 45
Asn Trp Leu Pro Leu Leu Leu Ser Pro Pro Leu Pro Phe Leu Ser Ile
50 55 60
Glu Cys Thr Leu Tyr Asn Phe Ser Gly Ile Val Ile Glu Asn Lys Ile
65 70 75 80
Phe Thr Ile Ile Thr Gly Phe Phe Gln Val Thr Ser Cys Arg Leu *
85 90 95

<210> 1041
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1041
Met Ser Asp Ile Ser Pro Leu Leu Tyr Glu Ile Trp Leu Gly Asp Thr
1 5 10 15
Ser Ala Gly Phe Phe Thr Phe Cys Val Thr Val Leu His Val Leu Leu
20 25 30
Leu Leu Ser Ser Val Leu His Phe Leu Cys Pro Arg Asp Thr Ser Val
35 40 45
Ile Ser Pro Phe Ile Pro Pro Leu Thr Pro Pro Gln Ser Arg Leu *
50 55 60 63

<210> 1042
<211> 415
<212> PRT
<213> Homo sapiens

<400> 1042
Met Asn Glu Thr Gly Val Ile Val Trp Tyr Leu Ala Leu Cys Leu Leu
1 5 10 15
Leu Ala Trp Leu Ile Val Gly Ala Ala Leu Phe Lys Gly Ile Lys Ser
20 25 30
Ser Gly Lys Val Val Tyr Phe Thr Ala Leu Phe Pro Tyr Val Val Leu
35 40 45
Leu Ile Leu Leu Val Arg Gly Ala Thr Leu Glu Gly Ala Ser Lys Gly
50 55 60
Ile Ser Tyr Tyr Ile Gly Ala Gln Ser Asn Phe Thr Lys Leu Lys Glu
65 70 75 80
Ala Glu Val Trp Lys Asp Ala Ala Thr Gln Ile Phe Tyr Ser Leu Ser
85 90 95
Val Ala Trp Gly Gly Leu Val Ala Leu Ser Ser Tyr Asn Lys Phe Lys

100 105 110
Asn Asn Cys Phe Ser Asp Ala Ile Val Val Cys Leu Thr Asn Cys Leu
115 120 125
Thr Ser Val Phe Ala Gly Phe Ala Ile Phe Ser Ile Leu Gly His Met
130 135 140
Ala His Ile Ser Gly Lys Glu Val Ser Gln Val Val Lys Ser Gly Phe
145 150 155 160
Asp Leu Ala Phe Ile Ala Tyr Pro Glu Ala Leu Ala Gln Leu Pro Gly
165 170 175
Gly Pro Phe Trp Ser Ile Leu Phe Phe Phe Met Leu Leu Thr Leu Gly
180 185 190
Leu Asp Ser Gln Phe Ala Ser Ile Glu Thr Ile Thr Thr Thr Ile Gln
195 200 205
Asp Leu Phe Pro Lys Val Met Lys Lys Met Arg Val Pro Ile Thr Leu
210 215 220
Gly Cys Cys Leu Val Leu Phe Leu Leu Gly Leu Val Cys Val Thr Gln
225 230 235 240
Ala Gly Ile Tyr Trp Val His Leu Ile Asp His Phe Cys Ala Gly Trp
245 250 255
Gly Ile Leu Ile Ala Ala Ile Leu Glu Leu Val Gly Ile Ile Trp Ile
260 265 270
Tyr Gly Gly Asn Arg Phe Ile Glu Asp Thr Glu Met Met Ile Gly Ala
275 280 285
Lys Arg Trp Ile Phe Trp Leu Trp Trp Arg Ala Cys Trp Phe Val Ile
290 295 300
Thr Pro Ile Leu Leu Ile Ala Ile Phe Ile Trp Ser Leu Val Gln Phe
305 310 315 320
His Arg Pro Asn Tyr Gly Ala Ile Pro Tyr Pro Asp Trp Gly Val Ala
325 330 335
Leu Gly Trp Cys Met Ile Val Phe Cys Ile Ile Trp Ile Pro Ile Met
340 345 350
Ala Ile Ile Lys Ile Ile Gln Ala Lys Gly Asn Ile Phe Gln Arg Leu
355 360 365
Ile Ser Cys Cys Arg Pro Ala Ser Asn Trp Gly Pro Tyr Leu Glu Gln
370 375 380
His Arg Gly Glu Arg Tyr Lys Asp Met Val Asp Pro Lys Lys Glu Ala
385 390 395 400
Asp His Glu Ile Pro Thr Val Ser Gly Ser Arg Lys Pro Glu *
405 410 414

<210> 1043
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1043
Met Pro Thr Leu Gly Asp Ala Leu Ile Leu Tyr Leu His Leu Val Leu
1 5 10 15
Gly Val Ala Gly Val Leu Gln Pro Pro Gly Pro Arg Pro Ser Gln Ala
20 25 30
Leu Gly Pro Thr Gly Asp Arg Ala Pro Gly Lys Trp Asn Arg Ser *
35 40 45 47

<210> 1044

<211> 146
<212> PRT
<213> Homo sapiens

<400> 1044
Met Leu Phe Ser Ser Met Thr Leu Arg Leu Ser Arg Cys Ser Cys Ser
1 5 10 15
Ile Leu Leu Phe Trp Ala Ser Ala Ala Cys Met Phe Pro Ser Ser Arg
20 25 30
Tyr Leu Trp Ser Gly Arg Ser Leu Val Ser Val Glu Gly Ser Asp Arg
35 40 45
Phe Ser Ser Ala Val Ser Ser Phe Ser Ser Lys Ala Asn Trp Val Lys
50 55 60
Pro Lys Phe Arg Ser Trp Ser Gly Gly Ile Glu Leu Gly Phe Gln Met
65 70 75 80
His Trp Pro Pro Gly Val Gly Pro Arg Tyr Ser Pro Ser Cys His Phe
85 90 95
Pro Lys Ser Arg Trp Arg Thr Arg Pro Leu Arg Leu Ser Thr Ala Pro
100 105 110
Cys Thr Ser Trp Thr Leu Glu Leu Gln Tyr Leu Ala Leu Gln Lys Val
115 120 125
Ile Leu Gln Trp Gln Glu Leu Ser Cys Val Phe Arg Met Ser Thr Ser
130 135 140
Pro *
145

<210> 1045
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1045
Met Ala Leu Phe Cys Leu Val Tyr Gln Ile Ile Phe Leu Ile Gln His
1 5 10 15
Thr His Phe Ser Leu Ala Lys Leu Leu Ile Met Ala Leu Asn Thr Leu
20 25 30
Thr Tyr Cys Val Leu Val Gln Ser Asn Asn Thr Gln Ser Thr Leu Arg
35 40 45
Lys Ser Ala Ser *
50 52

<210> 1046
<211> 407
<212> PRT
<213> Homo sapiens

<400> 1046
Met Gly Pro Ser Thr Pro Leu Leu Ile Leu Phe Leu Leu Ser Trp Ser
1 5 10 15
Gly Pro Leu Gln Gly Gln Gln His His Leu Val Glu Tyr Met Glu Arg
20 25 30
Arg Leu Ala Ala Leu Glu Glu Arg Leu Ala Gln Cys Gln Asp Gln Ser

35 40 45
Ser Arg His Ala Ala Glu Leu Arg Asp Phe Lys Asn Lys Met Leu Pro
50 55 60
Leu Leu Glu Val Ala Glu Lys Glu Arg Glu Ala Leu Arg Thr Glu Ala
65 70 75 80
Asp Thr Ile Ser Gly Arg Val Asp Arg Leu Glu Arg Glu Val Asp Tyr
85 90 95
Leu Glu Thr Gln Asn Pro Ala Leu Pro Cys Val Glu Phe Asp Glu Lys
100 105 110
Val Thr Gly Gly Pro Gly Thr Lys Gly Lys Gly Arg Arg Asn Glu Lys
115 120 125
Tyr Asp Met Val Thr Asp Cys Gly Tyr Thr Ile Ser Gln Val Arg Ser
130 135 140
Met Lys Ile Leu Lys Arg Phe Gly Gly Pro Ala Gly Leu Trp Thr Lys
145 150 155 160
Asp Pro Leu Gly Gln Thr Glu Lys Ile Tyr Val Leu Asp Gly Thr Gln
165 170 175
Asn Asp Thr Ala Phe Val Phe Pro Arg Leu Arg Asp Phe Thr Leu Ala
180 185 190
Met Ala Ala Arg Lys Ala Ser Arg Val Arg Val Pro Phe Pro Trp Val
195 200 205
Gly Thr Gly Gln Leu Val Tyr Gly Gly Phe Leu Tyr Phe Ala Arg Arg
210 215 220
Pro Pro Gly Arg Pro Gly Gly Gly Gly Glu Met Glu Asn Thr Leu Gln
225 230 235 240
Leu Ile Lys Phe His Leu Ala Asn Arg Thr Val Val Asp Ser Ser Val
245 250 255
Phe Pro Ala Glu Gly Leu Ile Pro Pro Tyr Gly Leu Thr Ala Asp Thr
260 265 270
Tyr Ile Asp Leu Ala Ala Asp Glu Glu Gly Leu Trp Ala Val Tyr Ala
275 280 285
Thr Arg Glu Asp Asp Arg His Leu Cys Leu Ala Lys Leu Asp Pro Gln
290 295 300
Thr Leu Asp Thr Glu Gln Gln Trp Asp Thr Pro Cys Pro Arg Glu Asn
305 310 315 320
Ala Glu Ala Ala Phe Val Ile Cys Gly Thr Leu Tyr Val Val Tyr Asn
325 330 335
Thr Arg Pro Ala Ser Arg Ala Arg Ile Gln Cys Ser Phe Asp Ala Ser
340 345 350
Gly Thr Leu Thr Pro Glu Arg Ala Ala Leu Pro Tyr Phe Pro Arg Arg
355 360 365
Tyr Gly Ala His Ala Ser Leu Arg Tyr Asn Pro Arg Glu Arg Gln Leu
370 375 380
Tyr Ala Trp Asp Asp Gly Tyr Gln Ile Val Tyr Lys Leu Glu Met Arg
385 390 395 400
Lys Lys Glu Glu Glu Val *
405 406

<210> 1047
<211> 268
<212> PRT
<213> Homo sapiens

<400> 1047
Met Ile Gln Lys Ile Leu Phe Lys Asp Leu Phe Arg Phe Leu Leu Val
1 5 10 15

Tyr Leu Leu Phe Met Ile Gly Tyr Ala Ser Ala Leu Val Ser Leu Leu
20 25 30
Asn Pro Cys Ala Asn Met Lys Val Cys Asn Glu Asp Gln Thr Asn Cys
35 40 45
Thr Val Pro Thr Tyr Pro Ser Cys Arg Asp Ser Glu Thr Phe Ser Thr
50 55 60
Phe Leu Leu Asp Leu Phe Lys Leu Thr Ile Gly Met Gly Asp Leu Glu
65 70 75 80
Met Leu Ser Ser Thr Lys Tyr Pro Val Val Phe Ile Ile Leu Leu Val
85 90 95
Thr Tyr Ile Ile Leu Thr Phe Val Leu Leu Leu Asn Met Leu Ile Ala
100 105 110
Leu Met Gly Glu Thr Val Gly Gln Val Ser Lys Glu Ser Lys His Ile
115 120 125
Trp Lys Leu Gln Trp Ala Thr Thr Ile Leu Asp Ile Glu Arg Ser Phe
130 135 140
Pro Val Phe Leu Arg Lys Ala Phe Arg Ser Gly Glu Met Val Thr Val
145 150 155 160
Gly Lys Ser Ser Asp Gly Thr Pro Asp Arg Arg Trp Cys Phe Arg Val
165 170 175
Asp Glu Val Asn Trp Ser His Trp Asn Gln Asn Leu Gly Ile Ile Asn
180 185 190
Glu Asp Pro Gly Lys Asn Glu Thr Tyr Gln Tyr Tyr Gly Phe Ser His
195 200 205
Thr Val Gly Arg Leu Arg Arg Asp Arg Trp Ser Ser Val Val Pro Arg
210 215 220
Val Val Glu Leu Asn Lys Asn Ser Asn Pro Asp Glu Val Val Val Pro
225 230 235 240
Leu Asp Ser Met Gly Asn Pro Arg Cys Asp Gly His Gln Gln Gly Tyr
245 250 255
Pro Arg Lys Trp Arg Thr Asp Asp Ala Pro Leu *
260 265 267

<210> 1048
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1048
Met Trp Ser His Phe Trp Lys Val Ser Thr Gln Gly Leu Phe Val Ala
1 5 10 15
Met Phe Trp Pro Leu Ile Pro Gln Phe Val Cys Asn Cys Leu Phe Tyr
20 25 30
Trp Ala Leu Tyr Phe Asn Pro Ile Ile Asn Ile Asp Leu Val Val Lys
35 40 45
Glu Leu Arg Arg Leu Glu Thr Gln Val Leu *
50 55 58

<210> 1049
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1049
Met Arg Cys Arg Cys Cys Leu Cys Ser Ser Cys Phe Trp Gly Leu Trp
1 5 10 15
Asp Pro Cys Pro Lys Ser Val Trp Ser Pro Trp Ser Ser Ser Ser Leu
20 25 30
Gly Ala Phe Ser Val Gly Ser Glu Leu Ala Ser Ala Ala Ser Ser Leu
35 40 45
Ser Pro Pro Ser Cys Ser Pro Arg Thr Ala Pro Arg Ser Thr Ala Lys
50 55 60
Leu Cys Leu Arg Trp Ser Arg Pro Gly Asn Cys Gly *
65 70 75 76

<210> 1050
<211> 474
<212> PRT
<213> Homo sapiens

<400> 1050
Met Arg Ala Leu Val Leu Leu Gly Cys Leu Leu Ala Ser Leu Leu Phe
1 5 10 15
Ser Gly Gln Ala Glu Glu Thr Glu Asp Ala Asn Glu Glu Ala Pro Leu
20 25 30
Arg Asp Arg Ser His Ile Glu Lys Thr Leu Met Leu Asn Glu Asp Lys
35 40 45
Pro Ser Asp Asp Tyr Ser Ala Val Leu Gln Arg Leu Arg Lys Ile Tyr
50 55 60
His Ser Ser Ile Lys Pro Leu Glu Gln Ser Tyr Lys Tyr Asn Glu Leu
65 70 75 80
Arg Gln His Glu Ile Thr Asp Gly Glu Ile Thr Ser Lys Pro Met Val
85 90 95
Leu Phe Leu Gly Pro Trp Ser Val Gly Lys Ser Thr Met Ile Asn Tyr
100 105 110
Leu Leu Gly Leu Glu Asn Thr Arg Tyr Gln Leu Tyr Thr Gly Ala Glu
115 120 125
Pro Thr Thr Ser Glu Phe Thr Val Leu Met His Gly Pro Lys Leu Lys
130 135 140
Thr Ile Glu Gly Ile Val Met Ala Ala Asp Ser Ala Arg Ser Phe Ser
145 150 155 160
Pro Leu Glu Lys Phe Gly Gln Asn Phe Leu Glu Lys Leu Ile Gly Ile
165 170 175
Glu Val Pro His Lys Leu Leu Glu Arg Val Thr Phe Val Asp Thr Pro
180 185 190
Gly Ile Ile Glu Asn Arg Lys Gln Gln Glu Arg Gly Tyr Pro Phe Asn
195 200 205
Asp Val Cys Gln Trp Phe Ile Asp Arg Ala Asp Leu Ile Phe Val Val
210 215 220
Phe Asp Pro Thr Lys Leu Asp Val Gly Leu Glu Leu Glu Met Leu Phe
225 230 235 240
Arg Gln Leu Lys Gly Arg Glu Ser Gln Ile Arg Ile Ile Leu Asn Lys
245 250 255
Ala Asp Asn Leu Ala Thr Gln Met Leu Met Arg Val Tyr Gly Ala Leu
260 265 270
Phe Trp Ser Leu Ala Pro Leu Ile Asn Val Thr Glu Pro Pro Arg Val
275 280 285
Tyr Val Ser Ser Phe Trp Pro Gln Glu Tyr Lys Pro Asp Thr His Gln
290 295 300

Glu Leu Phe Leu Gln Glu Glu Ile Ser Leu Leu Glu Asp Leu Asn Gln
305 310 315 320
Val Ile Glu Asn Arg Leu Glu Asn Lys Ile Ala Phe Ile Arg Gln His
325 330 335
Ala Ile Arg Val Arg Ile His Ala Leu Leu Val Asp Arg Tyr Leu Gln
340 345 350
Thr Tyr Lys Asp Lys Met Thr Phe Phe Ser Asp Gly Glu Leu Val Phe
355 360 365
Lys Asp Ile Val Glu Asp Pro Asp Lys Phe Tyr Ile Phe Lys Thr Ile
370 375 380
Leu Ala Lys Thr Asn Val Ser Lys Phe Asp Leu Pro Asn Arg Glu Ala
385 390 395 400
Tyr Lys Asp Phe Phe Gly Ile Asn Pro Ile Ser Ser Phe Lys Leu Leu
405 410 415
Ser Gln Gln Cys Ser Tyr Met Gly Gly Cys Phe Leu Glu Lys Ile Glu
420 425 430
Arg Ala Ile Thr Gln Glu Leu Pro Gly Leu Leu Gly Ser Leu Gly Leu
435 440 445
Gly Lys Asn Pro Gly Ala Leu Asn Cys Asp Lys Thr Gly Cys Ser Glu
450 455 460
Thr Pro Lys Asn Arg Tyr Arg Lys His *
465 470 473

<210> 1051
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1051
Met Gln Arg Pro Ser Ala Trp Trp Ile Leu Phe Cys Ser Leu Asn Leu
1 5 10 15
Leu Ala Arg Phe Ile Gln Cys Leu Gln Ile Val Asn Lys Glu Val His
20 25 30
Phe Phe Arg Tyr Ile Lys Tyr Tyr Lys Phe Trp Glu Gly Arg *
35 40 45 46

<210> 1052
<211> 233
<212> PRT
<213> Homo sapiens

<400> 1052
Met Ala Trp Thr Pro Leu Trp Leu Thr Leu Leu Thr Leu Cys Ile Gly
1 5 10 15
Ser Val Val Ser Ser Glu Leu Thr Gln Asp Pro Thr Val Ser Val Ala
20 25 30
Leu Gly Gln Thr Leu Arg Ile Lys Cys Gln Gly Asp Thr Ile Arg Ser
35 40 45
Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Ile Leu
50 55 60
Val Ile Tyr Gly Gln Asn Asn Arg Pro Ser Gly Ile Pro Gly Arg Phe
65 70 75 80
Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu

```
                85                  90                  95
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Gly Arg
            100                 105                 110
Thr Thr Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
        115                 120                 125
Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu
    130                 135                 140
Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr
145                 150                 155                 160
Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val Lys
                165                 170                 175
Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr
            180                 185                 190
Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His
        195                 200                 205
Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys
    210                 215                 220
Thr Val Ala Pro Thr Glu Cys Ser  *
225                 230     232
```

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<210> 1053
<211> 147
<212> PRT
<213> Homo sapiens
```

```
<400> 1053
Met Gly Ala Asp Arg Gly Pro His Val Val Leu Trp Thr Leu Ile Cys
 1               5                  10                  15
Leu Pro Val Val Phe Ile Leu Ser Phe Val Val Ser Phe Tyr Tyr Gly
            20                  25                  30
Thr Ile Thr Trp Tyr Asn Ile Phe Leu Val Tyr Asn Glu Glu Arg Thr
        35                  40                  45
Phe Trp His Lys Ile Ser Tyr Cys Pro Cys Leu Val Leu Phe Tyr Pro
    50                  55                  60
Val Leu Ile Met Ala Met Ala Ser Ser Leu Gly Leu Tyr Ala Ala Val
 65                 70                  75                  80
Val Gln Leu Ser Trp Ser Trp Glu Ala Trp Trp Gln Ala Ala Arg Asp
                85                  90                  95
Met Glu Lys Gly Phe Cys Gly Trp Leu Cys Ser Lys Leu Gly Leu Glu
            100                 105                 110
Asp Cys Ser Pro Tyr Ser Ile Val Glu Leu Leu Glu Ser Asp Asn Ile
        115                 120                 125
Ser Ser Thr Leu Ser Asn Lys Asp Pro Ile Gln Glu Val Glu Thr Ser
    130                 135                 140
Thr Val  *
145 146
```

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<210> 1054
<211> 123
<212> PRT
<213> Homo sapiens
```

```
<400> 1054
```

Met Tyr Val Thr Leu Val Phe Arg Val Lys Gly Ser Arg Leu Val Lys
1 5 10 15
Pro Ser Leu Cys Leu Ala Leu Leu Cys Pro Ala Phe Leu Val Gly Val
20 25 30
Val Arg Val Ala Glu Tyr Arg Asn His Trp Ser Asp Val Leu Ala Gly
35 40 45
Phe Leu Thr Gly Ala Ala Ile Ala Thr Phe Leu Val Thr Cys Val Val
50 55 60
His Asn Phe Gln Ser Arg Pro Pro Ser Gly Arg Arg Leu Ser Pro Trp
65 70 75 80
Glu Asp Leu Gly Gln Ala Pro Thr Met Asp Ser Pro Leu Glu Lys Asn
85 90 95
Pro Arg Ser Ala Gly Arg Ile Arg His Arg His Gly Ser Pro His Pro
100 105 110
Ser Arg Arg Thr Ala Pro Ala Val Ala Thr *
115 120 122

<210> 1055
<211> 122
<212> PRT
<213> Homo sapiens

<400> 1055
Met Leu Thr Cys Leu Phe Ser Phe Gln Gly Cys Trp Arg Ala Arg Gly
1 5 10 15
Trp Gln Arg Leu Cys Glu Gly Arg Arg Gly Trp Pro Gly Val Gly Gln
20 25 30
Arg Thr Leu Lys Val Ser Glu Pro Ala Pro Leu Arg Val Gly Arg Ala
35 40 45
Leu Pro Gln Ala Leu Leu Gly Ala Arg Pro His Cys Val Phe Pro Gly
50 55 60
Gly Glu Val Leu Gly Val Glu Ala Ala Phe Gly Ser Ser Phe Ile Leu
65 70 75 80
Ser Thr Phe Phe Leu His Gln Pro Leu Phe Phe Pro Gly Pro Lys Leu
85 90 95
Arg Ala Thr Gln Tyr Leu Ile Ser Ser Asp Pro Thr His Leu Pro Ala
100 105 110
Gly Arg Gly Pro Asn Ser Val Ser Met *
115 120 121

<210> 1056
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1056
Met Pro Thr Lys Leu Ser Ala Val Gly Ile Leu Val Gly Thr Leu Val
1 5 10 15
Ala Ile Gly Ile Phe Leu Ile Leu Ile Phe Thr His Trp Thr Met Ser
20 25 30
Arg Lys Lys Asp Pro Asp Gln Pro Ala Asp Ser Val Pro Leu Lys Ala
35 40 45
Thr Val *

50

<210> 1057
<211> 260
<212> PRT
<213> Homo sapiens

<400> 1057
Met Glu Ala Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
1 5 10 15
Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
20 25 30
Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser
35 40 45
Val Gly Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro
50 55 60
Arg Pro Leu Ile Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala
65 70 75 80
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95
Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln His Arg Asp
100 105 110
Asn Trp Pro Pro Gly Ala Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
115 120 125
Lys His Thr Thr Gly Glu Ile Val Leu Thr Gln Ala Pro Gly Thr Leu
130 135 140
Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln
145 150 155 160
Thr Ile Gly Ser Thr Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys
165 170 175
Ala Pro Lys Leu Leu Ile Tyr Trp Phe Ile Gln Phe Ala Lys Arg Gly
180 185 190
Pro Ile Lys Val Gln Cys His Arg Val Arg Gly Gln Thr Ser Leu Ser
195 200 205
Pro Ser Ala Asp Trp Ser Leu Lys Ile Leu Gln Cys Ile Ser Val Thr
210 215 220
Asn Met Gly Ala His Pro Thr Leu Leu Ala Glu Gly Pro Arg Trp Arg
225 230 235 240
Ser Asn Glu Leu Trp Leu His His Leu Ser Ser Ser Ser Arg His Leu
245 250 255
Met Ser Ser *
259

<210> 1058
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1058
Met Lys Gly Leu Phe Cys Leu Trp Pro Leu Val Arg Ser Val Ser Ser
1 5 10 15
Leu Met Thr Ser Ser Thr Ser Cys Pro Ser Pro Pro Thr Leu Pro Pro
20 25 30

Trp Arg Pro Cys Leu Pro Arg Leu Arg Met Arg Val Leu Val Leu Leu
35 40 45
Ile Trp Ser *
50 51

<210> 1059
<211> 97
<212> PRT
<213> Homo sapiens

<400> 1059
Met Gly Arg Gly Ser Glu Leu Pro Val Cys Leu Ala Phe Leu Val Cys
1 5 10 15
Leu Met Ala Ala Leu Gly Cys Cys Glu Val Leu Ser Thr Val His Pro
20 25 30
Glu Glu Thr Val Leu Arg Ala Pro Pro Thr Asn Phe Gln Arg Cys Gln
35 40 45
Leu Gln Gln Gly Ser Ala Leu Val Arg Glu Thr Ala Trp Gly Val Gly
50 55 60
Arg Gly Arg Pro Ser Glu Arg Trp His Gly Glu Leu Ala Gly Gly Gly
65 70 75 80
Ser Arg Arg Asp Gly Met Glu Gly Leu Gly Pro Val Leu Leu Gly Ala
85 90 95 96
*

<210> 1060
<211> 99
<212> PRT
<213> Homo sapiens

<400> 1060
Met Asn Lys His Phe Leu Phe Leu Phe Leu Leu Tyr Cys Leu Ile Ala
1 5 10 15
Ala Val Thr Ser Leu Gln Cys Ile Thr Cys His Leu Arg Thr Arg Thr
20 25 30
Asp Arg Cys Arg Arg Gly Phe Gly Val Cys Thr Ala Gln Lys Gly Glu
35 40 45
Ala Cys Met Leu Leu Arg Ile Tyr Gln Arg Asn Thr Leu Gln Ile Ser
50 55 60
Tyr Met Val Cys Gln Lys Phe Cys Arg Asp Met Thr Phe Asp Leu Arg
65 70 75 80
Asn Arg Thr Tyr Val His Thr Cys Cys Asn Tyr Asn Tyr Cys Asn Phe
85 90 95
Lys Leu *
98

<210> 1061
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1061
Met Asn Val Val Ser Leu Val Ile Leu Phe Trp Ala Ile Tyr Cys Val
1 5 10 15
Thr Ile Cys Met Asp Leu Tyr Leu Lys His Phe Cys Lys Lys Phe Phe
20 25 30
Lys Val Phe Phe Lys Cys Val Ile Ile Cys Ala Phe Lys Ser Ile Leu
35 40 45
His Phe Ser Leu Ile Cys Thr Phe Lys Lys Ile Phe Phe Phe Phe *.
50 55 60 63

<210> 1062
<211> 149
<212> PRT
<213> Homo sapiens

<400> 1062
Met Tyr Leu Ser Asn Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro
1 5 10 15
Phe Thr Leu Thr Leu Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys
20 25 30
Lys His Leu Lys Lys Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro
35 40 45
Ser Met Lys Val His Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu
50 55 60
Leu Leu Cys Ala Ile Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn
65 70 75 80
Phe Gly Arg Leu Glu Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile
85 90 95
Ile Phe Ser Tyr Pro Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn
100 105 110
Lys Lys Leu Lys Gln Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr
115 120 125
Trp Val Lys Asp Arg Ser Leu Arg Leu His Arg Phe Thr Arg Gly Ala
130 135 140
Leu Cys Val Phe *
145 148

<210> 1063
<211> 63
<212> PRT
<213> Homo sapiens

<400> 1063
Met His Gln Leu Phe Gly Leu Phe Val Thr Leu Met Phe Ala Ser Val
1 5 10 15
Gly Gly Gly Leu Gly Gly Ile Ile Leu Val Leu Cys Leu Leu Asp Pro
20 25 30
Cys Ala Leu Trp His Trp Val Ala Pro Ser Ser Met Val Gly Gly Arg
35 40 45
Glu Ala Ser Gln Ile Leu Pro Tyr His His Gln Gly Ser Cys *
50 55 60 62

<210> 1064
<211> 92
<212> PRT
<213> Homo sapiens

<400> 1064
```
Met Met Leu Met Ser Leu Gly Gly Leu Leu Gly Pro Pro Leu Ser Gly
 1               5                  10                  15
Phe Leu Arg Asp Glu Thr Gly Asp Phe Thr Ala Ser Phe Leu Leu Ser
            20                  25                  30
Gly Ser Leu Ile Leu Ser Gly Ser Phe Ile Tyr Ile Gly Leu Pro Arg
        35                  40                  45
Ala Leu Pro Ser Cys Gly Pro Ala Ser Pro Pro Ala Thr Pro Pro Pro
    50                  55                  60
Glu Thr Gly Glu Leu Leu Pro Ala Pro Gln Ala Val Leu Leu Ser Pro
65                  70                  75                  80
Gly Gly Pro Gly Ser Thr Leu Asp Thr Thr Cys  *
                85                  90  91
```

<210> 1065
<211> 67
<212> PRT
<213> Homo sapiens

<400> 1065
```
Met Phe Leu Glu His Ala Ile His Cys Ser Leu Leu Phe Leu Ser Gln
 1               5                  10                  15
Leu Pro Leu Leu Pro Pro Leu Val Phe Leu Leu Leu Ser His Leu Leu
            20                  25                  30
Ser Glu Val Pro Leu Ile Gln Gln Pro Pro Ser Leu Ser Pro Tyr Pro
        35                  40                  45
Asp Leu Leu Ser Pro Phe Ser Val Thr Arg Leu Pro Ser Asn Ile Leu
    50                  55                  60
Cys Asn  *
65  66
```

<210> 1066
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1066
```
Met Gly Gln Val Pro Cys Cys Trp Ala Trp Trp Ser Leu Leu Gln Gly
 1               5                  10                  15
Arg Gly Ser Trp Cys Glu His Lys Glu Leu Arg Gly Trp Arg Arg Pro
            20                  25                  30
Gly Pro Gly Ala Cys Arg Arg Thr Pro Ala Arg Gly Gln Ala Gly Pro
        35                  40                  45
Gly Ala Cys Arg Arg Thr Pro Ala Arg Gly Gln Ala Gly Pro Asp Ser
```

50 55 60
Leu Ala Gly Trp Asp Leu Thr Gly Ala Pro Gly Ser Leu Gly
65 70 75 78

<210> 1067
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1067
Met Tyr Phe Gly Ala Tyr Ala Phe Thr Val Ala Pro Arg Leu Ala Ile
1 5 10 15
Leu Gln Val Val Asn Val Ile Ser Tyr Lys Asp Ile Arg His Phe Tyr
20 25 30
Leu Arg His Trp Arg Asn Glu Arg Asn Cys Ile Cys His Val Asp Gly
35 40 45
Ala Leu Ile Lys Glu Gln *
50 54

<210> 1068
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1068
Met His Val Cys Met Pro Leu Cys Leu Phe Leu Leu Ser Phe Ser Val
1 5 10 15
Ser Pro Asp Pro Arg Leu Leu Arg Met Glu Arg Leu Phe Arg Gly Cys
20 25 30
Ala Gln Asp Cys Pro Phe Leu Ala Leu His Gln Gly Glu Leu Trp *
35 40 45 47

<210> 1069
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1069
Met Ser Asn Leu Gln Phe Ile Phe Lys Asp Phe Gly Ile Leu Ile Lys
1 5 10 15
Phe Trp Tyr Leu His Ile Lys Phe Gly Phe Tyr Ile Thr Ser Cys Leu
20 25 30
Leu Cys Phe Pro Pro Ser Phe Met Leu Phe Phe Gly Phe Trp Pro His
35 40 45
Asp Tyr Asn Leu Arg Phe Cys Ile His Ile Thr Phe Cys His Phe *
50 55 60 63

<210> 1070

<211> 73
<212> PRT
<213> Homo sapiens

<400> 1070
```
Met Pro Ser Ile Arg Leu Gly Leu Ser His Leu Phe Leu Thr Ala Gly
 1               5                  10                  15
Ile Tyr Cys Leu Leu Leu Cys Ala Arg Cys Cys Ala Leu Gly Arg Gly
            20                  25                  30
Thr Ala Trp Ala Ala Cys Pro Gly Gly Ala Cys Gly Leu Met Gly Glu
        35                  40                  45
Ala Asp Pro Ser Pro Pro His Cys Gln Gln Gly Gln Gly Lys Ser Thr
    50                  55                  60
His Arg Gly Leu Ile Pro Tyr Val  *
65                  70      72
```

<210> 1071
<211> 152
<212> PRT
<213> Homo sapiens

<400> 1071
```
Met Phe Trp Thr Met Ile Ile Leu Leu Gln Val Leu Ile Pro Ile Ser
 1               5                  10                  15
Leu Tyr Val Ser Ile Glu Ile Val Lys Leu Gly Gln Ile Tyr Phe Ile
            20                  25                  30
Gln Ser Asp Val Asp Phe Tyr Asn Glu Lys Met Asp Ser Ile Val Gln
        35                  40                  45
Cys Arg Ala Leu Asn Ile Ala Glu Asp Leu Gly Gln Ile Gln Tyr Leu
    50                  55                  60
Phe Ser Asp Lys Thr Gly Thr Leu Thr Glu Asn Lys Met Val Phe Arg
65                  70                  75                  80
Arg Trp Ser Gly Gly Arg Phe Asp Tyr Cys Pro Gly Glu Lys Ala Arg
                85                  90                  95
Arg Val Glu Ser Phe Gln Glu Ala Ala Phe Glu Glu Glu His Phe Leu
            100                 105                 110
Thr Thr Gly Arg Gly Phe Leu Thr His Met Ala Asn Pro Arg Ala Pro
        115                 120                 125
Pro Leu Ala Asp Thr Phe Lys Met Gly Ala Ser Gly Arg Leu Ser Pro
    130                 135                 140
Pro Ser Leu Thr Ala Arg Gly Ala
145                 150     152
```

<210> 1072
<211> 113
<212> PRT
<213> Homo sapiens

<400> 1072
```
Met Thr Ala Gly Val Leu Trp Gly Leu Phe Gly Val Leu Gly Phe Thr
 1               5                  10                  15
Gly Val Ala Leu Leu Leu Tyr Ala Leu Phe His Lys Ile Ser Gly Glu
```

```
                 20                  25                  30
Ser Ser Ala Thr Asn Glu Pro Arg Gly Ala Ser Arg Pro Asn Pro Gln
             35                  40                  45
Glu Phe Thr Tyr Ser Ser Pro Thr Pro Asp Met Glu Glu Leu Gln Pro
         50                  55                  60
Val Tyr Val Asn Val Gly Ser Val Asp Val Asp Val Val Tyr Ser Gln
 65                  70                  75                  80
Val Trp Ser Met Gln Gln Pro Glu Ser Ser Ala Asn Ile Arg Thr Leu
                     85                  90                  95
Leu Glu Asn Lys Asp Ser Gln Val Ile Tyr Ser Ser Val Lys Lys Ser
                100                 105                 110     112
 *
```

```
     <210> 1073
     <211> 52
     <212> PRT
     <213> Homo sapiens


     <400> 1073
Met Thr Leu Cys Cys Pro Trp Ala Thr Met His Pro Ser Thr Val Leu
  1               5                  10                  15
Arg Met Val Trp Ser Leu Arg Ser Arg Ala Arg Arg Trp Gly Ser Val
                 20                  25                  30
Arg Thr Gly Leu Ser Trp Ser Ser Ser Ser Asp Ser Arg Ile Thr Ser
             35                  40                  45
Leu Ser Leu  *
     50  51
```

```
     <210> 1074
     <211> 78
     <212> PRT
     <213> Homo sapiens


     <400> 1074
Met Phe Ser Arg Leu Tyr Ala Val Cys Met Leu Tyr Met Trp Gly Phe
  1               5                  10                  15
Val Asp Lys Met Cys Val Trp Ser Val Met Gln Val Cys Tyr Cys Leu
                 20                  25                  30
Val Phe Val Tyr Val Phe Leu Cys Met Val Cys Arg Val Arg Ala His
             35                  40                  45
Asp His Ile Gln Ile Leu Asp Pro Tyr Ser Arg Leu Val Leu Ser Arg
         50                  55                  60
Leu Pro Arg Leu Glu Thr Gly Lys Asp Ser Ser Ser Leu  *
 65                  70                  75      77
```

```
     <210> 1075
     <211> 253
     <212> PRT
     <213> Homo sapiens
```

<400> 1075
Met Ser Ser Ser Pro Gly Leu Leu Phe Ser Ser Leu Ser His Leu Leu
1 5 10 15
Leu Asn Ser Ser Thr Leu Ala Leu Leu Thr His Arg Leu Ser Gln Met
20 25 30
Thr Cys Leu Gln Ser Leu Arg Leu Asn Arg Asn Ser Ile Gly Asp Val
35 40 45
Gly Cys Cys His Leu Ser Glu Ala Leu Arg Ala Ala Thr Ser Leu Glu
50 55 60
Glu Leu Asp Leu Ser His Asn Gln Ile Gly Asp Ala Gly Asp Gln His
65 70 75 80
Leu Ala Thr Ile Leu Pro Gly Leu Pro Glu Leu Arg Lys Ile Asp Leu
85 90 95
Ser Gly Asn Ser Ile Ser Ser Ala Gly Gly Val Gln Leu Ala Glu Ser
100 105 110
Leu Val Leu Cys Arg Arg Leu Glu Glu Leu Met Leu Gly Cys Asn Ala
115 120 125
Leu Gly Asp Pro Thr Ala Leu Gly Leu Ala Gln Glu Leu Pro Gln His
130 135 140
Leu Arg Val Leu His Leu Pro Phe Ser His Leu Gly Pro Asp Gly Ala
145 150 155 160
Leu Ser Leu Ala Gln Asp Leu Asp Gly Ser Pro His Leu Glu Glu Ile
165 170 175
Ser Leu Ala Glu Asn Asn Leu Ala Gly Gly Val Leu Arg Phe Cys Met
180 185 190
Glu Leu Pro Leu Leu Arg Gln Ile Glu Leu Ser Trp Asn Leu Leu Gly
195 200 205
Asp Glu Ala Ala Ala Glu Leu Ala Gln Val Leu Pro Gln Met Gly Arg
210 215 220
Leu Lys Arg Val Glu Tyr Glu Gly Pro Gly Glu Glu Trp Asp Gly Leu
225 230 235 240
Lys Gly Asp Leu His Pro Gly Asn Thr Lys Arg Pro Leu
245 250 253

<210> 1076
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1076
Met Ser Asp Ile Ser Pro Leu Leu Tyr Glu Ile Trp Leu Gly Asp Thr
1 5 10 15
Ser Ala Gly Phe Phe Thr Phe Cys Val Thr Val Leu His Val Leu Leu
20 25 30
Leu Leu Ser Ser Val Leu His Phe Leu Cys Pro Arg Asp Thr Ser Val
35 40 45
Ile Ser Pro Phe Ile Pro Pro Leu Thr Pro Pro Gln Ser Arg Leu *
50 55 60 63

<210> 1077
<211> 147
<212> PRT
<213> Homo sapiens

<400> 1077
Met Met Lys Ser Leu Arg Val Leu Leu Val Ile Leu Trp Leu Gln Leu
1 5 10 15
Ser Trp Val Trp Ser Gln Gln Lys Glu Val Glu Gln Asn Ser Gly Pro
20 25 30
Leu Ser Val Pro Glu Gly Ala Ile Ala Ser Leu Asn Cys Thr Tyr Ser
35 40 45
Asp Arg Gly Ser Gln Ser Phe Phe Trp Tyr Arg Gln Tyr Ser Gly Lys
50 55 60
Ser Pro Glu Leu Ile Met Ser Ile Tyr Ser Asn Gly Asp Lys Glu Asp
65 70 75 80
Gly Arg Phe Thr Ala Gln Leu Asn Lys Ala Ser Gln Tyr Val Ser Leu
85 90 95
Leu Ile Arg Asp Ser Gln Pro Ser Asp Ser Ala Thr Tyr Leu Cys Ala
100 105 110
Asp Tyr Ser Gly Asn Thr Pro Leu Val Phe Gly Lys Gly Thr Arg Leu
115 120 125
Ser Val Ile Ala Asn Ile Gln Asn Pro Asp Pro Ala Leu Tyr Gln Leu
130 135 140
Arg Asp Ser
145 147

<210> 1078
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1078
Met Phe Gln Gly Ser Asn Ile Leu Phe Leu Leu Pro Ser Pro Gly Ile
1 5 10 15
Thr Ser Ile Asn Asp Arg Thr Tyr Phe Leu Phe Val Met Arg Ser Asn
20 25 30
Trp Leu Phe Leu Leu Thr Cys Leu Ile Ala Phe Gln Lys Asn Asn Lys
35 40 45
Ser Leu Lys Leu Leu Lys *
50 54

<210> 1079
<211> 97
<212> PRT
<213> Homo sapiens

<400> 1079
Met Ile Pro Ala Phe Gly Ile Phe Arg Leu Leu Ile Ile Ile Leu Ile
1 5 10 15
Ile Val Leu Asp Met Gly Phe Ala Leu Tyr Arg Arg Phe Phe Val Pro
20 25 30
Glu Asp Gly Ser Pro Val Ser Phe Ala Ala His Ile Ala Gly Gly Phe
35 40 45
Ala Gly Met Ser Ile Gly Tyr Thr Val Phe Ser Cys Phe Asp Lys Ala
50 55 60

Leu Met Lys Asp Pro Arg Phe Trp Ile Ala Ile Ala Ala Tyr Leu Ala
65 70 75 80
Cys Val Leu Phe Ala Val Phe Phe Asn Ile Phe Leu Ser Pro Ala Asn
85 90 95 96
*

<210> 1080
<211> 134
<212> PRT
<213> Homo sapiens

<400> 1080
Met Leu Ser Ile Leu Leu Ala Thr Leu Thr Leu Ser Leu Lys Glu Lys
1 5 10 15
Arg Gly Glu Arg Ser Ile His Gln Pro Glu Pro Ser Glu Lys Ser Val
20 25 30
Cys Leu Pro Val Ser Gly Ala Asp Pro Phe Arg Gly Ser Arg Gly Arg
35 40 45
Gly Lys Glu Ile Arg Arg Glu Lys Asp Ile Gly Leu Leu Glu His Val
50 55 60
Gly Gln Glu Val Pro Arg Arg Ile Cys Glu Gln Leu Pro Asp Ser Lys
65 70 75 80
Ala Leu Ala Arg Pro Gln Asp Gly Pro Cys Leu Leu Asp Ile Arg Lys
85 90 95
Pro Lys Gly Gln Asn Lys Asn Thr Cys Leu Val Gly Glu Gly Ser Leu
100 105 110
Arg Gly His Gln Val Gly Gln Ile Pro Leu Val Thr His Leu Trp Arg
115 120 125
Leu Pro Gln Lys Cys *
130 133

<210> 1081
<211> 185
<212> PRT
<213> Homo sapiens

<400> 1081
Met Lys Ile Leu Val Ala Phe Leu Val Val Leu Thr Ile Phe Gly Ile
1 5 10 15
Gln Ser His Gly Tyr Glu Val Phe Asn Ile Ile Ser Pro Ser Asn Asn
20 25 30
Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu Lys Asn Thr
35 40 45
Ala Ile Ile Asn Ile His Ala Gly Ser Cys Ser Ser Thr Thr Ile Phe
50 55 60
Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val Leu Ser Arg Arg Ala
65 70 75 80
Cys Phe Ile Leu Lys Met Asp His Gln Asn Ile Pro Pro Leu Asn Asn
85 90 95
Leu Gln Trp Tyr Ile Tyr Glu Lys Gln Ala Leu Asp Asn Met Phe Ser
100 105 110
Ser Lys Tyr Thr Trp Val Lys Tyr Asn Pro Leu Glu Ser Leu Ile Lys

```
        115                 120                 125
Asp Val Asp Trp Phe Leu Leu Gly Ser Pro Ile Glu Lys Leu Cys Lys
    130                 135                 140
His Ile Pro Leu Tyr Lys Gly Glu Val Val Glu Asn Thr His Asn Val
145                 150                 155                 160
Gly Ala Gly Gly Cys Ala Lys Ala Gly Leu Leu Gly Ile Leu Gly Ile
                165                 170                 175
Ser Ile Cys Ala Asp Ile His Val  *
            180                 184
```

<210> 1082
<211> 285
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(285)
<223> Xaa = any amino acid or nothing

<400> 1082

```
Met Val Ile Ala Leu Ile Ile Phe Leu Arg Ser Pro Ala Met Ala Gly
 1               5                  10                  15
Gly Leu Phe Ala Ile Glu Arg Glu Phe Phe Phe Glu Leu Gly Leu Tyr
            20                  25                  30
Asp Pro Gly Leu Gln Ile Trp Gly Gly Glu Asn Phe Glu Ile Ser Tyr
        35                  40                  45
Lys Ile Trp Gln Cys Gly Gly Lys Leu Leu Phe Xaa Pro Cys Ser Arg
    50                  55                  60
Val Gly His Ile Tyr Arg Leu Glu Gly Trp Gln Gly Asn Pro Pro Pro
65                  70                  75                  80
Ile Tyr Val Gly Ser Ser Pro Thr Leu Lys Asn Tyr Val Arg Val Val
                85                  90                  95
Glu Val Trp Trp Asp Glu Tyr Lys Asp Tyr Phe Tyr Ala Ser Arg Pro
            100                 105                 110
Glu Ser Gln Ala Leu Pro Tyr Gly Asp Ile Ser Glu Leu Lys Lys Phe
        115                 120                 125
Arg Glu Asp His Asn Cys Lys Ser Phe Lys Trp Phe Met Glu Glu Ile
    130                 135                 140
Ala Tyr Asp Ile Thr Ser His Tyr Pro Leu Pro Pro Lys Asn Val Asp
145                 150                 155                 160
Trp Gly Glu Ile Arg Gly Phe Glu Thr Ala Tyr Cys Ile Asp Ser Met
                165                 170                 175
Gly Lys Thr Asn Gly Gly Phe Val Glu Leu Gly Pro Cys His Arg Met
            180                 185                 190
Gly Gly Asn Gln Leu Phe Arg Ile Asn Glu Ala Asn Gln Leu Met Gln
        195                 200                 205
Tyr Asp Gln Cys Leu Thr Lys Gly Ala Asp Gly Ser Lys Val Met Ile
    210                 215                 220
Thr His Cys Asn Leu Asn Glu Phe Lys Glu Trp Gln Tyr Phe Lys Asn
225                 230                 235                 240
Leu His Arg Phe Thr His Ile Pro Ser Gly Lys Cys Leu Asp Arg Ser
                245                 250                 255
Glu Val Leu His Gln Val Phe Ile Ser Asn Cys Asp Ser Ser Lys Thr
            260                 265                 270
Thr Gln Lys Trp Glu Met Asn Asn Ile His Ser Val  *
        275                 280                 284
```

<210> 1083
<211> 73
<212> PRT
<213> Homo sapiens

<400> 1083
Met Phe Trp Phe Leu Asn Ile Phe Ile Leu Ile Leu Ser Lys His Ser
1 5 10 15
Ser Lys Ser Leu Ser Leu Gln Leu Pro Glu Val Leu Leu Leu Phe Leu
20 25 30
Cys Gln Phe Cys Leu Arg Leu His Pro Val Arg Gly Leu Arg Leu His
35 40 45
Phe Lys Ala Lys Leu Ala Asn His His Val Ile Cys Ile Gly Leu Gly
50 55 60
Phe Phe Leu Phe Val Ser Val Leu *
65 70 72

<210> 1084
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1084
Met Ile Phe Gly Thr Asp Cys Cys Ala Leu Ser Lys Tyr Met Trp Ala
1 5 10 15
Phe Val Phe Phe Leu Ile Lys Ala Arg Trp Arg Glu Lys Asn Pro Cys
20 25 30
Phe Asp Asp Ser Leu Arg Pro Glu Gln Cys Leu Leu Asp Glu Gly Ser
35 40 45
Leu Glu Lys Arg Tyr Ser Met *
50 55

<210> 1085
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1085
Met Gln Ile Phe Leu Leu Leu Tyr Ala Leu Gly Arg Phe Val Leu Leu
1 5 10 15
Val Thr Phe Ser Pro Leu Val Leu Ser Leu Ser Tyr Pro Val Leu Val
20 25 30
Ser Phe Tyr Leu Arg Tyr Pro Ser Val Leu Phe Val Phe Leu His Asn
35 40 45
Val Val Ser Leu Val Phe Gly Tyr Pro Leu Gln Asn Gln Gln Gly Leu
50 55 60
Ile His Pro *
65 67

<210> 1086
<211> 62
<212> PRT
<213> Homo sapiens

<400> 1086
Met Cys Pro Phe Met Pro Pro Pro Gly Leu Leu Arg Leu Phe Gln Ile
1 5 10 15
Val Phe Trp Val Glu His Pro Gly Ser Val Asn Pro Phe Glu Arg Ser
20 25 30
Thr Ile Ile Gly Arg Ser Ala Lys Leu Lys Lys Asp Leu Lys Ser His
35 40 45
Trp Glu Pro Gly Gln Gln Ala Leu Gln Gln Gly Leu Leu *
50 55 60 61

<210> 1087
<211> 294
<212> PRT
<213> Homo sapiens

<400> 1087
Met Pro Tyr Val Thr Glu Ala Thr Arg Val Gln Leu Val Leu Pro Leu
1 5 10 15
Leu Val Ala Glu Ala Ala Ala Ala Pro Ala Phe Leu Glu Ala Phe Ala
20 25 30
Ala Asn Val Leu Glu Pro Arg Glu His Ala Leu Leu Thr Leu Leu Leu
35 40 45
Val Tyr Gly Pro Arg Glu Gly Gly Arg Gly Ala Pro Asp Pro Phe Leu
50 55 60
Gly Val Lys Ala Ala Ala Ala Glu Leu Glu Arg Arg Tyr Pro Gly Thr
65 70 75 80
Arg Leu Ala Trp Leu Ala Val Arg Ala Glu Ala Pro Ser Gln Val Arg
85 90 95
Leu Met Asp Val Val Ser Lys Lys His Pro Val Asp Thr Leu Phe Phe
100 105 110
Leu Thr Thr Val Trp Thr Arg Pro Gly Pro Glu Val Leu Asn Arg Cys
115 120 125
Arg Met Asn Ala Ile Ser Gly Trp Gln Ala Phe Phe Pro Val His Phe
130 135 140
Gln Glu Phe Asn Pro Ala Leu Ser Pro Gln Arg Ser Pro Pro Gly Pro
145 150 155 160
Pro Gly Ala Gly Pro Asp Pro Pro Ser Pro Pro Gly Ala Asp Pro Ser
165 170 175
Arg Gly Ala Pro Ile Gly Gly Arg Phe Asp Arg Gln Ala Ser Ala Glu
180 185 190
Gly Cys Phe Tyr Asn Ala Asp Tyr Leu Ala Ala Arg Ala Arg Leu Ala
195 200 205
Gly Glu Leu Ala Gly Gln Glu Glu Glu Glu Ala Leu Glu Gly Leu Glu
210 215 220
Val Met Asp Val Phe Leu Arg Phe Ser Gly Leu His Leu Phe Arg Ala
225 230 235 240
Val Glu Pro Gly Leu Val Gln Lys Phe Ser Leu Arg Asp Cys Ser Pro
245 250 255

Arg Leu Ser Glu Glu Leu Tyr His Arg Cys Arg Leu Ser Asn Leu Glu
260 265 270
Gly Leu Gly Gly Arg Ala Gln Leu Ala Met Ala Leu Phe Glu Gln Glu
275 280 285
Gln Ala Asn Ser Thr *
290 293

<210> 1088
<211> 477
<212> PRT
<213> Homo sapiens

<400> 1088
Met Gln Trp Lys Val Thr Leu Thr Ser Arg Trp Gly Leu Leu Arg His
1 5 10 15
Cys Gln Val Leu Ala Gly Leu Leu His Leu Gly Asn Ile Gln Phe Ala
20 25 30
Ala Ser Glu Asp Glu Ala Gln Pro Cys Gln Pro Met Asp Asp Ala Lys
35 40 45
Tyr Ser Val Arg Thr Ala Ala Ser Leu Leu Gly Leu Pro Glu Asp Val
50 55 60
Leu Leu Glu Met Val Gln Ile Lys Thr Ile Arg Ala Gly Arg Gln Gln
65 70 75 80
Gln Val Phe Arg Lys Pro Cys Ala Arg Ala Glu Cys Asp Thr Arg Arg
85 90 95
Asp Cys Leu Ala Lys Leu Ile Tyr Ala Arg Leu Phe Asp Trp Leu Val
100 105 110
Ser Val Ile Asn Ser Ser Ile Cys Ala Asp Thr Asp Ser Trp Thr Thr
115 120 125
Phe Ile Gly Leu Leu Asp Val Tyr Gly Phe Glu Ser Phe Pro Asp Asn
130 135 140
Ser Leu Glu Gln Leu Cys Ile Asn Tyr Ala Asn Glu Lys Leu Gln Gln
145 150 155 160
His Phe Val Ala His Tyr Leu Arg Ala Gln Gln Glu Glu Tyr Ala Val
165 170 175
Glu Gly Leu Glu Trp Ser Phe Ile Asn Tyr Gln Asp Asn Gln Pro Cys
180 185 190
Leu Asp Leu Ile Glu Gly Ser Pro Ile Ser Ile Cys Ser Leu Ile Asn
195 200 205
Glu Glu Cys Arg Leu Asn Arg Pro Ser Ser Ala Ala Gln Leu Gln Thr
210 215 220
Arg Ile Glu Thr Ala Leu Ala Gly Ser Pro Cys Leu Gly His Asn Lys
225 230 235 240
Leu Ser Arg Glu Pro Ser Phe Ile Val Val His Tyr Ala Gly Pro Val
245 250 255
Arg Tyr His Thr Ala Gly Leu Val Glu Lys Asn Lys Asp Pro Ile Pro
260 265 270
Pro Glu Leu Thr Arg Leu Leu Gln Gln Ser Gln Asp Pro Leu Leu Met
275 280 285
Gly Leu Phe Pro Thr Asn Pro Lys Glu Lys Thr Gln Glu Glu Pro Pro
290 295 300
Gly Gln Ser Arg Ala Pro Val Leu Thr Val Val Ser Lys Phe Lys Ala
305 310 315 320
Ser Leu Glu Gln Leu Leu Gln Val Leu His Ser Thr Thr Pro His Tyr
325 330 335
Ile Arg Cys Ile Met Pro Asn Ser Gln Gly Gln Ala Gln Thr Phe Leu

```
            340                 345                 350
Gln Glu Glu Val Leu Ser Gln Leu Glu Ala Cys Gly Leu Val Glu Thr
        355                 360                 365
Ile His Ile Ser Ala Ala Gly Phe Pro Ile Arg Val Ser His Arg Asn
    370                 375                 380
Phe Val Glu Arg Tyr Lys Leu Leu Arg Arg Leu His Pro Cys Thr Ser
385                 390                 395                 400
Ser Gly Pro Asp Ser Pro Tyr Pro Ala Lys Gly Leu Pro Glu Trp Cys
                405                 410                 415
Pro His Ser Glu Glu Ala Thr Leu Glu Pro Leu Ile Gln Asp Ile Leu
            420                 425                 430
His Thr Leu Pro Val Leu Thr Gln Ala Ala Ala Ile Thr Gly Asp Ser
        435                 440                 445
Ala Glu Ala Met Pro Ala Pro Met His Cys Gly Arg Thr Lys Val Phe
    450                 455                 460
Met Thr Asp Ser Met Leu Glu Leu Leu Glu Cys Gly Ala
465                 470                 475     477
```

```
<210> 1089
<211> 66
<212> PRT
<213> Homo sapiens
```

```
<400> 1089
Met Ala Ala Gly Val Ser Ser Val Leu Leu Leu Leu Phe Thr Leu Met
 1               5                  10                  15
Glu Ser Gly Leu Lys His Arg Val Trp Glu Ser Trp Gln Leu Phe Thr
            20                  25                  30
Ser Trp Leu Ala Phe Cys Ser Pro Ser Phe Ser Val Val Phe Thr Cys
        35                  40                  45
Ser Tyr Ser Leu Ser Ser Trp Gly Leu Lys Gly Ile Ser Ser Arg Thr
    50                  55                  60
Arg  *
 65
```

```
<210> 1090
<211> 185
<212> PRT
<213> Homo sapiens
```

```
<400> 1090
Met Leu Trp Leu Leu Phe Phe Leu Val Thr Ala Ile His Ala Glu Leu
 1               5                  10                  15
Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser Ile Arg
            20                  25                  30
Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Asn Glu Glu Tyr
        35                  40                  45
Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys Val Pro Asn Arg
    50                  55                  60
Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys Asn Val Thr Gln Arg
65                  70                  75                  80
Val Ser Phe Trp Phe Val Val Thr Asp Pro Ser Lys Asn His Thr Leu
                85                  90                  95
```

```
Pro Ala Val Glu Val Gln Ser Ala Ile Arg Met Asn Lys Asn Arg Ile
            100                 105                 110
Asn Asn Ala Phe Phe Leu Asn Asp Gln Thr Leu Glu Phe Leu Lys Ile
        115                 120                 125
Pro Ser Thr Leu Ala Pro Pro Met Asp Pro Ser Val Pro Ile Trp Ile
    130                 135                 140
Ile Ile Phe Gly Val Ile Phe Cys Ile Ile Ile Val Ala Ile Ala Leu
145                 150                 155                 160
Leu Ile Leu Ser Gly Ile Trp Gln Arg Arg Arg Lys Asn Lys Glu Pro
                165                 170                 175
Ser Glu Val Asp Asp Ala Glu Glu  *
            180             184
```

```
<210> 1091
<211> 47
<212> PRT
<213> Homo sapiens
```

```
<400> 1091
Met Leu Gly Gly Asn Phe Leu Met Phe Leu Pro Pro Leu Gln Arg Leu
 1               5                  10                  15
Cys Ser Asn Leu Leu Ser Tyr Val Ile Pro Asn Asp Phe Ser Val Met
            20                  25                  30
Ser Cys Phe Ile Lys Ala Ser Leu Asn Tyr Thr Leu Leu Ile  *
        35                  40                  45  46
```

```
<210> 1092
<211> 46
<212> PRT
<213> Homo sapiens
```

```
<400> 1092
Met Val Leu Trp Asn Leu Met Leu His Ser Leu Ser Ala Val Thr Tyr
 1               5                  10                  15
Pro Pro Asp Leu Val Ser Trp Asn Leu His Phe Lys Gln Asn Pro Asp
            20                  25                  30
His Ser Pro Leu Pro Gln Leu Thr Trp Glu Val Leu Pro  *
        35                  40                  45
```

```
<210> 1093
<211> 64
<212> PRT
<213> Homo sapiens
```

```
<400> 1093
Met Thr Val Ser Phe Cys Cys Cys Trp Ile Leu Ala Val Leu Pro Ser
 1               5                  10                  15
Pro Pro Leu Tyr Gln Asp Leu Val Gly Ser Lys Leu Glu Ile Gln Ala
            20                  25                  30
Ala Gly Asp Pro Met Pro Ala Ala Ser Arg Leu Phe His Glu Arg Gln
```

```
        35                  40                  45
Ser Leu Pro Gly Ala Pro Ala Thr Ser Ala Ser Pro Ser Val Leu  *
    50                  55                  60          63
```

<210> 1094
<211> 85
<212> PRT
<213> Homo sapiens

<400> 1094

```
Met His Phe Leu Ala Thr Phe Ala Leu Phe Phe Ile Phe Gly Val Phe
 1               5                  10                  15
Phe Leu Phe Ala Val Leu Thr Asn Leu Leu Leu Ala Glu Glu Val Asn
            20                  25                  30
Ile Arg Gly Gly Asn Phe Leu Gly Ser Phe Leu Val His Thr Leu Phe
        35                  40                  45
Leu Asp Gln Val Pro Gly Glu Ile Thr His Asp Ser His Leu Val Leu
    50                  55                  60
Ala Ile Thr Ile Asn Thr Ala Ser Pro Lys Phe Ser Ser Ser Ile Phe
65                  70                  75                      80
Phe Tyr Gln Leu  *
            84
```

<210> 1095
<211> 89
<212> PRT
<213> Homo sapiens

<400> 1095

```
Met Ala Ser His Gly Glu Glu Asp Arg His Trp Leu Arg Ala Cys Thr
 1               5                  10                  15
Trp Ile Trp Ala Leu Ser Leu Thr Leu Ser Val Ser Ser Ser Val Gly
            20                  25                  30
Trp Arg Arg Gly Gly Cys Arg Trp Leu Gly Arg Arg Asn Ala Thr Val
        35                  40                  45
Pro Arg Asn Ser Pro His Gly Thr Ser Cys Leu His Cys Val Leu Asp
    50                  55                  60
Ile Pro Ala Lys Cys Gly Arg Lys Arg Ser Gly Glu Gly Thr Phe Gln
65                  70                  75                      80
Ser Leu Leu Leu Phe Cys Thr Ala  *
                85          88
```

<210> 1096
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1096

```
Met Phe Val Ile Ala Phe Leu Ser Pro Leu Ser Leu Ile Phe Leu Ala
 1               5                  10                  15
```

```
Lys Phe Leu Lys Lys Ala Asp Thr Arg Asp Ser Arg Gln Ala Cys Leu
            20                  25                  30
Ala Ala Ser Leu Ala Leu Ala Leu Asn Gly Val Phe Thr Asn Thr Ile
        35                  40                  45
Lys Leu Ile Val Gly Arg Pro Arg Pro Asp Phe Phe Tyr Arg Cys Phe
    50                  55                  60
Pro Asp Gly Leu Ala His Ser Asp Leu Met Cys Thr Gly Asp Lys Asp
65                  70                  75                  80
Val Val Asn Glu Gly Arg Lys Ser Phe Pro Ser Gly His Ser Ser Phe
                85                  90                  95
Ala Phe Ala Gly Leu Ala Phe Ala Ser Phe Tyr Leu Ala Gly Lys Leu
            100                 105                 110
His Cys Phe Thr Pro Gln Gly Arg Gly Lys Ser Trp Arg Phe Cys Ala
        115                 120                 125
Phe Leu Ser Pro Leu Leu Phe Ala Ala Val Ile Ala Leu Ser Arg Thr
    130                 135                 140
Cys Asp Tyr Lys His His Trp Gln Gly Pro Phe Lys Trp  *
145                 150                 155     157
```

```
<210> 1097
<211> 88
<212> PRT
<213> Homo sapiens
```

```
<400> 1097
Met Ile Thr Thr Ser Leu Lys Ser Ser Ser Arg Leu Cys Cys Phe Arg
 1               5                  10                  15
Arg Ser Ile Phe Phe Thr Ala Thr Cys Phe Pro Val Cys Phe Ser Val
            20                  25                  30
Ala Met His Thr Met Pro Val Glu Pro Ser Pro Ile Leu Ile Lys Leu
        35                  40                  45
Ala Lys Tyr Ser Leu Gly Ser Pro Gly Leu Thr Thr Ser Cys Arg Ala
    50                  55                  60
Ala Arg Asn Cys Ser Trp Asp Thr Leu Glu Gly Cys Trp Ser Glu Glu
65                  70                  75                  80
Glu Pro Gln Leu Gly Gly Gly  *
                85      87
```

```
<210> 1098
<211> 58
<212> PRT
<213> Homo sapiens
```

```
<400> 1098
Met Met Ser Gly Trp Leu Leu Arg Ala Ala Ile Cys Arg Gly Leu Leu
 1               5                  10                  15
Ser Ser Glu Ser Leu Thr Phe Thr Ser Ala Pro His Ser Ile Ser Ile
            20                  25                  30
Ala Val Thr Cys Arg Asp Gly Asn Leu Gln Thr Gly Tyr Arg Pro Thr
        35                  40                  45
His Val Val Phe Leu Ser Thr Ala Arg  *
    50                  55      57
```

<210> 1099
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1099
Met Ala Ser Glu Pro Cys Trp Trp Ala Gly Met Leu Pro Cys Ala Cys
1 5 10 15
Ala Gly Leu Arg Arg Cys Ser His Ser Arg Phe Leu Gln Arg Gly His
20 25 30
Gly Leu His Ser Leu Met Gly Ser Leu Pro Ala Pro Ile Ser Pro Pro
35 40 45
Trp Thr His Pro Trp Gly Ile Ile Leu Pro Trp Pro Ile Arg Gly His
50 55 60
Pro Ser Val Pro Ile Arg Leu *
65 70 71

<210> 1100
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1100
Met Ser Phe Phe Leu Ile Leu Gly Val Gly Ser Cys Leu Ser Tyr Ser
1 5 10 15
Leu Val Pro Leu Ile Ile Leu Ser Phe Cys His Phe Tyr Pro Glu Ser
20 25 30
Val Gly Cys Pro Asp Ala Pro Ser Pro Arg Val Arg Gly Arg Val
35 40 45 47

<210> 1101
<211> 130
<212> PRT
<213> Homo sapiens

<400> 1101
Met Arg Pro Leu Lys Pro Gly Ala Pro Leu Pro Ala Leu Phe Leu Leu
1 5 10 15
Ala Leu Ala Leu Ser Pro His Gly Ala His Gly Arg Pro Arg Gly Arg
20 25 30
Arg Gly Ala Arg Val Thr Asp Lys Glu Pro Lys Pro Leu Leu Phe Leu
35 40 45
Pro Ala Ala Gly Ala Gly Arg Thr Pro Ser Gly Ser Arg Ser Ala Glu
50 55 60
Ile Phe Pro Arg Asp Ser Asn Leu Lys Asp Lys Phe Ile Lys His Phe
65 70 75 80
Thr Gly Pro Val Thr Phe Ser Pro Glu Cys Ser Lys His Phe His Arg
85 90 95
Leu Tyr Tyr Asn Thr Arg Glu Cys Ser Thr Pro Ala Tyr Tyr Lys Arg
100 105 110

```
Cys Ala Arg Leu Leu Thr Arg Leu Ala Val Ser Pro Leu Cys Ser Gln
        115                 120                 125
Thr  *
129
```

<210> 1102
<211> 170
<212> PRT
<213> Homo sapiens

<400> 1102
```
Met Gln Phe Val Leu Leu Arg Thr Leu Ala Tyr Ile Pro Thr Pro Ile
  1               5                  10                  15
Tyr Phe Gly Ala Val Ile Asp Thr Thr Cys Met Leu Trp Gln Gln Glu
             20                  25                  30
Cys Gly Val Gln Gly Ser Cys Trp Glu Tyr Asn Val Thr Ser Phe Arg
         35                  40                  45
Phe Val Tyr Phe Gly Leu Ala Ala Val Leu Lys Tyr Val Gly Cys Ile
     50                  55                  60
Phe Ile Leu Leu Ala Trp Tyr Ser Ile Lys Asp Thr Glu Asp Glu Gln
 65                  70                  75                  80
Pro Arg Leu Arg Gln Lys Lys Ile Cys Leu Ser Thr Leu Ser Asp Thr
                 85                  90                  95
Met Thr Gln Pro Asp Ser Ala Gly Val Val Ser Cys Pro Leu Phe Thr
            100                 105                 110
Pro Asp Gly Glu Ile His Lys Lys Thr Gly Leu Arg Lys Arg Asp Pro
        115                 120                 125
Gly Gly Thr Thr Glu Pro Thr Pro Gly Pro Leu Arg Lys Arg Pro Leu
    130                 135                 140
Cys Thr Leu Glu Ala Pro Arg Leu Pro Asn Lys Ala Pro Phe Thr Leu
145                 150                 155                 160
Glu Leu Ala Leu Leu Arg Val Arg Leu  *
                165             169
```

<210> 1103
<211> 62
<212> PRT
<213> Homo sapiens

<400> 1103
```
Met Leu Ile Ile Phe Asn Ala Val Trp Val Arg Cys Leu Lys Pro Lys
  1               5                  10                  15
Ile Pro Ala Arg Pro Thr Thr Asn Asp Thr Met Ile Ser Lys Thr Lys
             20                  25                  30
Gln His Thr Gln Tyr Thr Ser Tyr Ala Pro Ser Trp Pro Trp Leu Gly
         35                  40                  45
Pro Ala Ala Cys Gln His Gly Pro Leu Ile Ser His Thr Pro
     50                  55                  60      62
```

<210> 1104
<211> 83

<212> PRT
<213> Homo sapiens

<400> 1104
Met Lys Gln Leu Ser Pro Leu Pro Leu Pro Trp Val Leu Cys Phe Leu
1 5 10 15
Trp Lys Pro Ser Lys Leu Ser Val Leu Ser Phe Ala Ser Pro Pro Ser
20 25 30
Thr Lys Pro Ser Gln Gln Ala Gly Leu Val Cys Ser Leu Ile Arg Val
35 40 45
Ser Thr Ser Ser Thr Pro Ala Cys Thr Phe Tyr Leu Pro Val Asn Ala
50 55 60
Lys Cys Arg Ser Cys Pro Leu Asn Asn Pro Pro Trp Glu Val Pro Trp
65 70 75 80
Ile Asn *
82

<210> 1105
<211> 124
<212> PRT
<213> Homo sapiens

<400> 1105
Met Val Phe Thr Val Thr Leu Lys Leu Ala Leu Asp Thr His Tyr Trp
1 5 10 15
Thr Trp Ile Asn His Phe Val Ile Trp Gly Ser Leu Leu Phe Tyr Val
20 25 30
Val Phe Ser Leu Leu Trp Gly Gly Val Ile Trp Pro Phe Leu Asn Tyr
35 40 45
Gln Arg Met Tyr Tyr Val Phe Ile Gln Met Leu Ser Ser Gly Pro Ala
50 55 60
Trp Leu Ala Ile Val Leu Leu Val Thr Ile Ser Leu Leu Pro Asp Val
65 70 75 80
Leu Lys Lys Val Leu Cys Arg Gln Leu Trp Pro Thr Ala Thr Glu Arg
85 90 95
Val Gln Thr Lys Ser Gln Cys Leu Ser Val Glu Gln Ser Thr Ile Phe
100 105 110
Met Leu Ser Gln Thr Ser Ser Ser Leu Ser Phe *
115 120 123

<210> 1106
<211> 248
<212> PRT
<213> Homo sapiens

<400> 1106
Met Ser Phe Ser Ala Tyr Gln Thr Ala Phe Ile Cys Leu Gly Leu Leu
1 5 10 15
Val Gln Gln Ile Ile Phe Phe Leu Gly Thr Thr Ala Leu Ala Phe Leu
20 25 30
Val Leu Met Pro Val Leu His Gly Arg Asn Leu Leu Leu Phe Arg Ser
35 40 45

Leu Glu Ser Ser Trp Pro Phe Trp Leu Thr Leu Ala Leu Ala Val Ile
50 55 60
Leu Gln Asn Met Ala Ala His Trp Val Phe Leu Glu Thr His Asp Gly
65 70 75 80
His Pro Gln Leu Thr Asn Arg Arg Val Leu Tyr Ala Ala Thr Phe Leu
85 90 95
Leu Phe Pro Leu Asn Val Leu Val Gly Ala Met Val Ala Thr Trp Arg
100 105 110
Val Leu Leu Ser Ala Leu Tyr Asn Ala Ile His Leu Gly Gln Met Asp
115 120 125
Leu Ser Leu Leu Pro Pro Arg Ala Ala Thr Leu Asp Pro Gly Tyr Tyr
130 135 140
Thr Tyr Arg Asn Phe Leu Lys Ile Glu Val Ser Gln Ser His Pro Ala
145 150 155 160
Met Thr Ala Phe Cys Ser Leu Leu Leu Gln Ala Gln Ser Leu Leu Pro
165 170 175
Arg Thr Met Ala Ala Pro Gln Asp Ser Leu Arg Pro Gly Glu Glu Asp
180 185 190
Glu Gly Met Gln Leu Leu Gln Thr Lys Asp Ser Met Ala Lys Gly Ala
195 200 205
Arg Pro Gly Ala Ser Arg Gly Arg Ala Arg Trp Gly Leu Ala Tyr Thr
210 215 220
Leu Leu His Asn Pro Thr Leu Gln Val Phe Arg Lys Thr Ala Leu Leu
225 230 235 240
Gly Ala Asn Gly Ala Gln Pro *
245 247

<210> 1107
<211> 121
<212> PRT
<213> Homo sapiens

<400> 1107
Met Met Leu Ala Phe Thr Met Trp Asn Pro Trp Ile Ala Met Cys Leu
1 5 10 15
Leu Gly Leu Ser Tyr Ser Leu Leu Ala Cys Ala Leu Trp Pro Met Val
20 25 30
Ala Phe Val Val Pro Glu His Gln Leu Gly Thr Ala Tyr Gly Phe Met
35 40 45
Gln Ser Ile Gln Asn Leu Gly Leu Ala Ile Ile Ser Ile Ile Ala Gly
50 55 60
Met Ile Leu Asp Ser Arg Gly Tyr Leu Phe Leu Glu Val Phe Phe Ile
65 70 75 80
Ala Cys Val Ser Leu Ser Leu Leu Ser Val Val Leu Leu Tyr Leu Val
85 90 95
Asn Arg Ala Gln Gly Gly Asn Leu Asn Tyr Ser Ala Arg Gln Arg Glu
100 105 110
Glu Ile Lys Phe Ser His Thr Glu *
115 120

<210> 1108
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1108

```
Met Phe Lys Asn Thr Ser Gly Tyr Thr Glu Arg Val Ala Val Trp Leu
  1               5                  10                  15
Gly Val Glu Ile Phe Cys Leu Leu Met Met Ser Ser Val Leu Val Pro
             20                  25                  30
Leu Phe Tyr Phe Leu Met Leu Phe Gly Asn Phe Leu Gln Asn Leu Ser
         35                  40                  45
Leu Gly Ser Arg  *
     50      52
```

<210> 1109
<211> 259
<212> PRT
<213> Homo sapiens

<400> 1109

```
Met His Val Val Ile Val Leu Lys Ala Leu Val Ala Val Gln Ile Leu
  1               5                  10                  15
Leu Ser Ile Lys Glu Tyr Thr Leu Glu Arg Asn His Met His Val Ile
             20                  25                  30
Ser Val Ile Lys Val Leu Val Lys Ala Gln Thr Ser Leu Asn Ile Arg
         35                  40                  45
Glu Tyr Thr Leu Val Lys Ser Leu Ile Ile Ala Ile Val Val Arg Lys
     50                  55                  60
Pro Ser Val Arg Val Leu Thr Leu Phe Phe Ile Arg Glu Phe Thr Leu
 65                  70                  75                  80
Glu Lys Asn Tyr Tyr Leu Cys Thr Gln Cys Ser Lys Ser Phe Ser Gln
                 85                  90                  95
Ile Ser Asp Leu Ile Lys His Gln Arg Ile His Thr Gly Glu Lys Pro
            100                 105                 110
Tyr Lys Cys Ser Glu Cys Arg Lys Ala Phe Ser Gln Cys Ser Ala Leu
        115                 120                 125
Thr Leu His Gln Arg Ile His Thr Gly Lys Lys Pro Asn Pro Cys Asp
    130                 135                 140
Glu Cys Gly Lys Ser Phe Ser Arg Arg Ser Asp Leu Ile Asn His Gln
145                 150                 155                 160
Lys Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Asp Ala Cys Gly Lys
                165                 170                 175
Ala Phe Ser Thr Cys Thr Asp Leu Ile Glu His Gln Lys Thr His Ala
            180                 185                 190
Glu Glu Lys Pro Tyr Gln Cys Val Gln Cys Ser Arg Ser Cys Ser Gln
        195                 200                 205
Leu Ser Glu Leu Thr Ile His Glu Glu Val His Cys Gly Glu Asp Ser
    210                 215                 220
Gln Asn Val Met Asn Val Arg Lys Pro Leu Val Cys Thr Pro Thr Leu
225                 230                 235                 240
Phe Ser Thr Arg Asp Thr Val Pro Glu Lys Asn Leu Met Asn Ala Val
                245                 250                 255
Asp Tyr  *
    258
```

<210> 1110

<211> 47
<212> PRT
<213> Homo sapiens

<400> 1110
```
Met Thr Cys Ser Leu Leu Ser Leu Leu Asp Ala Val Cys Ser Ser Phe
 1               5                  10                  15
Val Gln Ala Phe Cys Ser Arg Asp Pro Glu Arg Trp Pro Ala Ile Ser
            20                  25                  30
Pro His Ser Leu Ser Gly Ala Phe Tyr Phe Leu Asn Val Cys  *
        35                  40                  45  46
```

<210> 1111
<211> 93
<212> PRT
<213> Homo sapiens

<400> 1111
```
Met Ser Leu Arg Ala Pro Ser Val Arg Ile Phe Val Tyr Leu Leu Phe
 1               5                  10                  15
Arg Leu His Thr Gln Arg Gly Leu Leu Ala Gly Arg Arg Gln Trp Gly
            20                  25                  30
Pro Cys Pro Leu Ser Phe Ser His Phe Leu His Leu Ser Val Leu Ser
        35                  40                  45
Cys Ser Thr Gln Ile Tyr Thr Glu Gly Ser Trp Pro Gly Trp Ala Ser
    50                  55                  60
Leu Gly Ala Pro Ser Val His Trp Ala Arg Phe Pro Cys Trp Leu Gln
65                  70                  75                  80
Ala Met Gly Ser Phe Ser Pro Leu Cys Pro Ser Cys  *
                85                  90      92
```

<210> 1112
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1112
```
Met Met Pro Thr Asn Leu Ala His Leu Val Phe Trp Gln Ala Leu Leu
 1               5                  10                  15
Ala Ser Gly Arg Phe Ser Leu Met Glu His Tyr Pro Pro Asn Val Gln
            20                  25                  30
Ser Asn Arg Gly Ile Thr His Tyr Met Leu Pro Arg Gly Tyr Ile Leu
        35                  40                  45
Gly Leu Leu Tyr Ser Ser Ala Gly Asn Thr Gly Thr Ser Arg Pro Arg
    50                  55                  60
Arg Thr His Tyr Gly Thr  *
65                  70
```

<210> 1113
<211> 47

<212> PRT
<213> Homo sapiens

<400> 1113
Met Tyr Leu Val Lys Gly Leu Leu Ile Gly Leu His Ser Ile Leu Leu
1 5 10 15
Cys Leu Arg Glu Gln Gly Gly Leu Arg Arg Val Glu Arg Asp Glu Gly
20 25 30
Thr Ala Ser Trp Tyr Ser Ser Gln Asn Thr Tyr Asn Ile Tyr *
35 40 45 46

<210> 1114
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1114
Met Thr Val Leu Ser Phe Gln Tyr Glu Tyr Leu Ile Phe Leu Leu Thr
1 5 10 15
Ser Leu Thr Thr Ile Tyr Asn Thr Thr Leu Ser Arg Ser Gly Asp Gly
20 25 30
Arg Arg Thr Cys Leu Val Phe Asn Leu Arg Glu Lys Val Phe Cys Phe
35 40 45
Ser Thr Leu Gly Ile Ile *
50 54

<210> 1115
<211> 83
<212> PRT
<213> Homo sapiens

<400> 1115
Met Asn Val Ile Cys Leu Thr Leu Cys Leu Val Ser Ser Lys Cys Ser
1 5 10 15
Val Gly Gly Thr Ala Ser Phe Val Leu Leu Cys Phe Ser Leu Pro Val
20 25 30
Ser Ser Arg Arg Arg Ala Phe Gln Glu Ser Gln Gly Trp Thr Glu Pro
35 40 45
Arg Gly Gly Pro Ser Gly Leu Pro His Thr Glu Pro Gly Phe Met Ala
50 55 60
Ser Ala Ala Thr Arg Gly Leu Ser Gly Cys Gly Ser Gln Ala Ala Val
65 70 75 80
Leu Thr *
82

<210> 1116
<211> 145
<212> PRT
<213> Homo sapiens

<400> 1116

```
Met Val Leu Leu Val Val Gly Asn Leu Val Asn Trp Ser Phe Ala Leu
 1               5                  10                  15
Phe Gly Leu Ile Tyr Arg Pro Arg Asp Phe Ala Ser Tyr Met Leu Gly
            20                  25                  30
Ile Phe Ile Cys Asn Leu Leu Leu Tyr Leu Ala Phe Tyr Ile Ile Met
        35                  40                  45
Lys Leu Arg Ser Ser Glu Lys Val Leu Pro Val Pro Leu Phe Cys Ile
    50                  55                  60
Val Ala Thr Ala Val Met Trp Ala Ala Ala Leu Tyr Phe Phe Phe Gln
65                  70                  75                  80
Asn Leu Ser Ser Trp Glu Gly Thr Pro Ala Glu Ser Arg Glu Lys Asn
                85                  90                  95
Arg Glu Cys Ile Leu Leu Asp Phe Phe Asp Asp His Asp Ile Trp His
            100                 105                 110
Phe Leu Ser Ala Thr Ala Leu Phe Phe Ser Phe Leu Asp Leu Leu Thr
        115                 120                 125
Leu Asp Asp Asp Leu Asp Val Val Arg Arg Asp Gln Ile Pro Val Phe
    130                 135                 140                 144
 *
```

<210> 1117
<211> 139
<212> PRT
<213> Homo sapiens

<400> 1117

```
Met Gly Asp Phe Ala Gly Val Asp Phe Val Phe Leu Val Val Cys Phe
 1               5                  10                  15
Ala Gln Arg Gln Gly Ala Ala Glu Ala Val Gly Ala Val Leu Ala Val
            20                  25                  30
Leu Leu Cys Asp Thr Leu Leu Gly Val Thr Arg Leu Glu Gly Val Ile
        35                  40                  45
His Leu Pro Leu Tyr Phe Gly Leu Ser Gly Ile Glu Val Ile Gln Gln
    50                  55                  60
Ala His Asn Arg Gly Ser Ser Arg Phe Gln Leu Leu Ile Arg Trp Arg
65                  70                  75                  80
Glu Asp Glu Asp Arg Trp Cys Ser His Ser Ser Phe Asp Val His Leu
                85                  90                  95
Gly Pro Leu Ala Glu Arg Pro His Val Ser Thr Gln Leu Leu Thr Val
            100                 105                 110
Ile Ser Cys Lys Ile Phe Arg Leu Gln Ala Thr Asp Cys Glu Ser Lys
        115                 120                 125
Phe Cys Pro Arg Ser Ser Ala Ala Glu Pro  *
    130                 135         138
```

<210> 1118
<211> 194
<212> PRT
<213> Homo sapiens

<400> 1118

```
Met Cys Leu Leu Phe Leu Leu Pro Arg Phe Pro Val Ser Trp Arg Ala
 1              5                  10                  15
Gly Val Asp Gly Ala Ala Pro Ser Ser Gln Asp Leu Trp Arg Ile Arg
            20                  25                  30
Ser Pro Cys Gly Asp Cys Glu Gly Phe Asp Val His Ile Met Asp Asp
        35                  40                  45
Met Ile Lys Arg Ala Leu Asp Phe Arg Glu Ser Arg Glu Ala Glu Pro
    50                  55                  60
His Pro Leu Trp Glu Tyr Pro Cys Arg Ser Leu Ser Glu Pro Trp Gln
 65                 70                  75                  80
Ile Leu Thr Phe Asp Phe Gln Gln Pro Val Pro Leu Gln Pro Leu Cys
                85                  90                  95
Ala Glu Gly Thr Val Glu Leu Lys Arg Pro Gly Gln Ser His Ala Ala
            100                 105                 110
Val Leu Trp Met Glu Tyr His Leu Thr Pro Glu Cys Thr Leu Ser Thr
        115                 120                 125
Gly Leu Leu Glu Pro Ala Asp Pro Glu Gly Gly Cys Cys Trp Asn Pro
    130                 135                 140
His Cys Lys Gln Ala Val Tyr Phe Phe Ser Pro Ala Pro Asp Pro Arg
145                 150                 155                 160
Ala Leu Leu Gly Gly Pro Arg Thr Val Ser Tyr Ala Val Glu Phe His
                165                 170                 175
Pro Asp Thr Gly Asp Ile Ile Met Glu Phe Arg His Ala Asp Thr Pro
            180                 185                 190
Asp  *
193
```

<210> 1119
<211> 118
<212> PRT
<213> Homo sapiens

<400> 1119

```
Met Leu Val Leu Leu Pro Arg Ser Lys Ala Met Pro Leu Leu Ser Val
 1              5                  10                  15
Asn Val Thr Leu Ala Phe Phe Pro Arg Asn Lys Glu Ile Val Lys Tyr
            20                  25                  30
Leu Leu Asn Gln Gly Ala Asp Val Thr Leu Arg Ala Lys Asn Gly Tyr
        35                  40                  45
Thr Ala Phe Asp Leu Val Met Leu Leu Asn Asp Pro Asp Ile Phe Gly
    50                  55                  60
Gly Glu Leu Ile Gly Phe Leu Ser Val Val Thr Glu Leu Val Arg Leu
 65                 70                  75                  80
Leu Ala Ser Val Phe Met Gln Val Asn Lys Asp Ile Gly Arg Arg Ser
                85                  90                  95
His Gln Leu Pro Leu Pro His Ser Lys Val Pro Thr Ala Leu Glu His
            100                 105                 110
Pro Ser Ala Ala Arg  *
        115     117
```

<210> 1120
<211> 842
<212> PRT

<213> Homo sapiens

<400> 1120

```
Met Leu Trp Gly Ser Gly Lys Cys Lys Ala Leu Thr Lys Phe Lys Phe
1               5                   10                  15
Val Phe Phe Leu Arg Leu Ser Arg Ala Gln Gly Gly Leu Phe Glu Thr
            20                  25                  30
Leu Cys Asp Gln Leu Leu Asp Ile Pro Gly Thr Ile Arg Lys Gln Thr
        35                  40                  45
Phe Met Ala Met Leu Leu Lys Leu Arg Gln Arg Val Leu Phe Leu Leu
    50                  55                  60
Asp Gly Tyr Asn Glu Phe Lys Pro Gln Asn Cys Pro Glu Ile Glu Ala
65                  70                  75                  80
Leu Ile Lys Glu Asn His Arg Phe Lys Asn Met Val Ile Val Thr Thr
                85                  90                  95
Thr Thr Glu Cys Leu Arg His Ile Arg Gln Phe Gly Ala Leu Thr Ala
            100                 105                 110
Glu Val Gly Asp Met Thr Glu Asp Ser Ala Gln Ala Leu Ile Arg Glu
        115                 120                 125
Val Leu Ile Lys Glu Leu Ala Glu Gly Leu Leu Leu Gln Ile Gln Lys
    130                 135                 140
Ser Arg Cys Leu Arg Asn Leu Met Lys Thr Pro Leu Phe Val Val Ile
145                 150                 155                 160
Thr Cys Ala Ile Gln Met Gly Glu Ser Glu Phe His Ser His Thr Gln
                165                 170                 175
Thr Thr Leu Phe His Thr Phe Tyr Asp Leu Leu Ile Gln Lys Asn Lys
            180                 185                 190
His Lys His Lys Gly Val Ala Ala Ser Asp Phe Ile Arg Ser Leu Asp
        195                 200                 205
His Cys Gly Tyr Leu Ala Leu Glu Gly Val Phe Ser His Lys Phe Asp
    210                 215                 220
Phe Glu Leu Gln Asp Val Ser Ser Val Asn Glu Asp Val Leu Leu Thr
225                 230                 235                 240
Thr Gly Leu Leu Cys Lys Tyr Thr Ala Gln Arg Phe Lys Pro Lys Tyr
                245                 250                 255
Lys Phe Phe His Lys Ser Phe Gln Glu Tyr Thr Ala Gly Arg Arg Leu
            260                 265                 270
Ser Ser Leu Leu Thr Ser His Glu Pro Glu Glu Val Thr Lys Gly Asn
        275                 280                 285
Gly Tyr Leu Gln Lys Met Val Ser Ile Ser Asp Ile Thr Ser Thr Tyr
    290                 295                 300
Ser Ser Leu Leu Arg Tyr Thr Cys Gly Ser Ser Val Glu Ala Thr Arg
305                 310                 315                 320
Ala Val Met Lys His Leu Ala Ala Val Tyr Gln His Gly Cys Leu Leu
                325                 330                 335
Gly Leu Ser Ile Ala Lys Arg Pro Leu Trp Arg Gln Glu Ser Leu Gln
            340                 345                 350
Ser Val Lys Asn Thr Thr Glu Gln Glu Ile Leu Lys Ala Ile Asn Ile
        355                 360                 365
Asn Ser Phe Val Glu Cys Gly Ile His Leu Tyr Gln Glu Ser Thr Ser
    370                 375                 380
Lys Ser Ala Leu Ser Gln Glu Phe Glu Ala Phe Phe Gln Gly Lys Ser
385                 390                 395                 400
Leu Tyr Ile Asn Ser Gly Asn Ile Pro Asp Tyr Leu Phe Asp Phe Phe
                405                 410                 415
Glu His Leu Pro Asn Cys Ala Ser Ala Leu Asp Phe Ile Lys Leu Gly
            420                 425                 430
Phe Tyr Gly Gly Ala Met Ala Ser Trp Glu Lys Ala Ala Glu Asp Thr
```

```
        435                 440                 445
Gly Gly Ile His Met Glu Glu Ala Pro Glu Thr Tyr Ile Pro Ser Arg
    450                 455                 460
Ala Val Ser Leu Phe Phe Asn Trp Lys Gln Glu Phe Arg Thr Leu Glu
465                 470                 475                 480
Val Thr Leu Arg Asp Phe Ser Lys Leu Asn Lys Gln Asp Ile Arg Tyr
                485                 490                 495
Leu Gly Lys Ile Phe Ser Ser Ala Thr Ser Leu Arg Leu Gln Ile Lys
            500                 505                 510
Arg Cys Ala Gly Val Ala Gly Ser Leu Ser Leu Val Leu Ser Thr Cys
        515                 520                 525
Lys Asn Ile Tyr Ser Leu Met Val Glu Ala Ser Pro Leu Thr Ile Glu
    530                 535                 540
Asp Glu Arg His Ile Thr Ser Val Thr Asn Leu Lys Thr Leu Ser Ile
545                 550                 555                 560
His Asp Leu Gln Asn Gln Arg Leu Pro Gly Gly Leu Thr Asp Ser Leu
                565                 570                 575
Gly Asn Leu Lys Asn Leu Thr Lys Leu Ile Met Asp Asn Ile Lys Met
            580                 585                 590
Asn Glu Glu Asp Ala Ile Lys Leu Ala Glu Gly Leu Lys Asn Leu Lys
        595                 600                 605
Lys Met Cys Leu Phe His Leu Thr His Leu Ser Asp Ile Gly Glu Gly
    610                 615                 620
Met Asp Tyr Ile Val Lys Ser Leu Ser Ser Glu Pro Cys Asp Leu Glu
625                 630                 635                 640
Glu Ile Gln Leu Val Ser Cys Cys Leu Ser Ala Asn Ala Val Lys Ile
                645                 650                 655
Leu Ala Gln Asn Leu His Asn Leu Val Lys Leu Ser Ile Leu Asp Leu
            660                 665                 670
Ser Glu Asn Tyr Leu Glu Lys Asp Gly Asn Glu Ala Leu His Glu Leu
        675                 680                 685
Ile Asp Arg Met Asn Val Leu Glu Gln Leu Thr Ala Leu Met Leu Pro
    690                 695                 700
Trp Gly Cys Asp Val Gln Gly Ser Leu Ser Ser Leu Leu Lys His Leu
705                 710                 715                 720
Glu Glu Val Pro Gln Leu Val Lys Leu Gly Leu Lys Asn Trp Arg Leu
                725                 730                 735
Thr Asp Thr Glu Ile Arg Ile Leu Gly Ala Phe Phe Gly Lys Asn Pro
            740                 745                 750
Leu Lys Asn Phe Gln Gln Leu Asn Leu Ala Gly Asn Arg Val Ser Ser
        755                 760                 765
Asp Gly Trp Leu Ala Phe Met Gly Val Phe Glu Asn Leu Lys Gln Leu
    770                 775                 780
Val Phe Phe Asp Phe Ser Thr Lys Glu Phe Leu Pro Asp Pro Ala Leu
785                 790                 795                 800
Val Arg Lys Leu Ser Gln Val Leu Ser Lys Leu Thr Phe Leu Gln Glu
                805                 810                 815
Ala Arg Leu Val Gly Trp Gln Phe Asp Asp Asp Asp Leu Ser Val Ile
            820                 825                 830
Thr Gly Ala Phe Lys Leu Val Thr Ala  *
        835                 840 841
```

<210> 1121
<211> 90
<212> PRT
<213> Homo sapiens

<400> 1121
Met Gly Leu Phe Phe Phe Phe Ser Gly Val Gly Ser Phe Val Gly Ser
1   5   10   15
Gly Leu Leu Ala Leu Val Ser Ile Lys Ala Ile Gly Trp Met Ser Ser
            20   25   30
His Thr Asp Phe Gly Asn Ile Asn Gly Cys Tyr Leu Asn Tyr Tyr Phe
        35   40   45
Phe Leu Leu Ala Ala Ile Gln Gly Ala Thr Leu Leu Leu Phe Leu Ile
    50   55   60
Ile Ser Val Lys Tyr Asp His His Arg Asp His Gln Arg Ser Arg Ala
65   70   75   80
Asn Gly Val Pro Thr Ser Arg Arg Ala *
                85   89

<210> 1122
<211> 129
<212> PRT
<213> Homo sapiens

<400> 1122
Met Phe Leu Leu Phe Trp Phe Ile Leu Ser Glu Gly Cys Pro Leu Leu
1   5   10   15
Glu Gln Leu Asn Ile Ser Trp Cys Asp Gln Val Thr Lys Asp Gly Ile
            20   25   30
Gln Ala Leu Val Arg Gly Cys Gly Gly Leu Lys Ala Leu Phe Leu Lys
        35   40   45
Gly Cys Thr Gln Leu Glu Asp Glu Ala Leu Lys Tyr Ile Gly Ala His
    50   55   60
Cys Pro Glu Leu Val Thr Leu Asn Leu Gln Thr Cys Leu Gln Ile Thr
65   70   75   80
Asp Glu Gly Leu Ile Thr Ile Cys Arg Gly Cys His Lys Leu Gln Ser
                85   90   95
Leu Cys Ala Ser Gly Cys Ser Asn Ile Thr Asp Ala Ile Leu Asn Ala
            100   105   110
Leu Ser Gln Asn Cys Pro Arg Leu Ile Ile Leu Glu Val Ala Arg Cys
        115   120   125
Ser
129

<210> 1123
<211> 243
<212> PRT
<213> Homo sapiens

<400> 1123
Met Ala Ala Ala Leu Trp Gly Phe Phe Pro Val Leu Leu Leu Leu Leu
1   5   10   15
Leu Ser Gly Asp Val Gln Ser Ser Glu Val Pro Gly Ala Ala Ala Glu
            20   25   30
Gly Ser Gly Gly Ser Gly Val Gly Ile Gly Asp Arg Phe Lys Ile Glu
        35   40   45
Gly Arg Ala Val Val Pro Gly Val Lys Pro Gln Asp Trp Ile Ser Ala

```
    50                  55                  60
Ala Arg Val Leu Val Asp Gly Glu Glu His Val Gly Phe Leu Lys Thr
 65                 70                  75                  80
Asp Gly Ser Phe Val Val His Asp Ile Pro Ser Gly Ser Tyr Val Val
                85                  90                  95
Glu Val Val Ser Pro Ala Tyr Arg Phe Asp Pro Val Arg Val Asp Ile
            100                 105                 110
Thr Ser Lys Gly Lys Met Arg Ala Arg Tyr Val Asn Tyr Ile Lys Thr
        115                 120                 125
Ser Glu Val Val Arg Leu Pro Tyr Pro Leu Gln Met Lys Ser Ser Gly
    130                 135                 140
Pro Pro Ser Tyr Phe Ile Lys Arg Glu Ser Trp Gly Trp Thr Asp Phe
145                 150                 155                 160
Leu Met Asn Pro Met Val Met Met Met Val Leu Pro Leu Leu Ile Phe
                165                 170                 175
Val Leu Leu Pro Lys Val Val Asn Thr Ser Asp Pro Asp Met Arg Arg
            180                 185                 190
Glu Met Glu Gln Ser Met Asn Met Leu Asn Ser Asn His Glu Leu Pro
        195                 200                 205
Asp Val Ser Glu Phe Met Thr Arg Leu Phe Ser Ser Lys Ser Ser Gly
    210                 215                 220
Lys Ser Ser Ser Gly Ser Ser Lys Thr Gly Lys Ser Gly Ala Gly Lys
225                 230                 235                 240
Arg Arg  *
    242
```

<210> 1124
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1124

```
Met Leu Ser Tyr Ala His Ile Thr Leu Ala Val Leu Arg Ile Pro Ser
  1               5                  10                  15
Ala Thr Gly Cys Trp Arg Ala Phe Phe Thr Cys Ala Ser His Leu Thr
            20                  25                  30
Val Val Thr Val Phe Tyr Thr Ala Leu Leu Phe Met Tyr Val Arg Pro
        35                  40                  45
Gln Ala Ile Asp Ser Arg Ser Ser Asn Lys Leu Ile Ser Val Leu Tyr
    50                  55                  60
Thr Val Ile Thr Pro Ser Val
 65                 70  71
```

<210> 1125
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1125

```
Met Pro Thr Leu Gly Asp Ala Leu Ile Leu Tyr Leu His Leu Val Leu
  1               5                  10                  15
Gly Val Ala Gly Val Leu Gln Pro Pro Gly Pro Arg Pro Ser Gln Ala
            20                  25                  30
```

```
Leu Gly Pro Thr Gly Asp Arg Ala Pro Gly Lys Trp Asn Arg Ser  *
        35                  40                  45      47
```

<210> 1126
<211> 159
<212> PRT
<213> Homo sapiens

<400> 1126

```
Met Phe Leu Ile Val Leu Pro Leu Glu Ser Met Ala His Gly Leu Phe
 1               5                  10                  15
His Glu Leu Gly Asn Cys Leu Gly Gly Thr Ser Val Gly Tyr Ala Ile
            20                  25                  30
Val Ile Pro Thr Asn Phe Cys Ser Pro Asp Gly Gln Pro Thr Leu Leu
        35                  40                  45
Pro Pro Glu His Val Gln Glu Leu Asn Leu Arg Ser Thr Gly Met Leu
    50                  55                  60
Asn Ala Ile Gln Arg Phe Phe Ala Tyr His Met Ile Glu Thr Tyr Gly
 65                  70                  75                  80
Cys Asp Tyr Ser Thr Ser Gly Leu Ser Phe Asp Thr Leu His Ser Lys
                85                  90                  95
Leu Lys Ala Phe Leu Glu Leu Arg Thr Val Asp Gly Pro Arg His Asp
            100                 105                 110
Thr Tyr Ile Leu Tyr Tyr Ser Gly His Thr His Gly Thr Gly Glu Trp
        115                 120                 125
Ala Leu Ala Gly Gly Asp Thr Leu Arg Leu Asp Thr Leu Ile Glu Trp
    130                 135                 140
Trp Arg Glu Lys Asn Gly Ser Phe Cys Ser Pro Pro Tyr Tyr Arg
145                 150                 155             159
```

<210> 1127
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1127

```
Met Thr Gly Pro Arg Pro Met Ile Leu His Phe Ile Leu Val Ala Ser
 1               5                  10                  15
Ala Ser Cys Trp Glu Val Leu Phe Cys Cys Trp Gln Pro Cys Pro Leu
            20                  25                  30
Gly Ile His Ala Thr Ser Asn Ser Pro Ser Gln Leu Gln Gln Leu Ser
        35                  40                  45
Cys Thr Lys Leu Pro Leu Met Phe Arg Arg Ile Leu Glu Asp Thr Ile
    50                  55                  60
Phe Ala Ile Leu Tyr His Ile Ala Thr Ile Phe  *
 65                  70                  75
```

<210> 1128
<211> 140
<212> PRT
<213> Homo sapiens

<400> 1128
Met Gly Ala Gly Leu Ala Val Val Pro Leu Met Gly Leu Leu Glu Ser
1 5 10 15
Ile Ala Val Ala Lys Ala Phe Ala Ser Gln Asn Asn Tyr Arg Ile Asp
20 25 30
Ala Asn Gln Glu Leu Leu Ala Ile Gly Leu Thr Asn Met Leu Gly Ser
35 40 45
Leu Val Ser Ser Tyr Pro Val Thr Gly Ser Phe Gly Arg Thr Ala Val
50 55 60
Asn Ala Gln Ser Gly Val Cys Thr Pro Ala Glu Gly Leu Val Thr Glu
65 70 75 80
Val Leu Val Leu Leu Ser Leu Asp Tyr Leu Thr Ser Leu Phe Tyr Tyr
85 90 95
Ile Pro Lys Ser Ala Leu Ala Ala Val Ile Ile Met Ala Val Ala Pro
100 105 110
Leu Phe Asp Thr Lys Ile Phe Arg Thr Leu Trp Arg Val Lys Arg Leu
115 120 125
Asp Leu Leu Ser Leu Ser Val Thr Phe Leu Leu Cys
130 135 140

<210> 1129
<211> 116
<212> PRT
<213> Homo sapiens

<400> 1129
Met Ala Glu Ala Phe Pro Phe Phe Ser Pro Phe Leu Gly Trp Leu Gly
1 5 10 15
Val Phe Leu Thr Gly Ser Asp Thr Ser Ser Asn Ala Leu Phe Ser Ser
20 25 30
Leu Gln Ala Thr Thr Ala His Gln Ile Gly Val Ser Asp Val Leu Leu
35 40 45
Val Ala Ala Asn Thr Ser Gly Gly Val Thr Gly Lys Met Ile Ser Pro
50 55 60
Gln Ser Ile Ala Val Ala Cys Ala Ala Thr Gly Leu Val Gly Lys Glu
65 70 75 80
Ser Asp Leu Phe Arg Phe Thr Leu Lys His Ser Leu Phe Phe Ala Thr
85 90 95
Ile Val Gly Leu Ile Thr Leu Ala Gln Ala Tyr Trp Phe Thr Gly Met
100 105 110
Leu Val His *
115

<210> 1130
<211> 81
<212> PRT
<213> Homo sapiens

<400> 1130
Met Asn Lys Leu Leu Val Ala Ala Thr Ala Ile Leu Phe Ser Leu Gly
1 5 10 15

Cys His Glu Lys Cys Lys Ile Phe Phe Leu Lys Ser Ile Ser Ser Pro
20 25 30
Gln Ser Leu Phe Leu Ala Asp Leu Cys Ala Ser Glu Pro Tyr Leu Leu
35 40 45
Phe Leu Asn Ala Val Leu Ser Ala Cys Asn Thr Ile Ser Phe Ile Ser
50 55 60
Val Pro Glu Ser Ser Gly Phe Ala Pro Ser Pro Pro Ala Ile Leu Leu
65 70 75 80
Leu
81

<210> 1131
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1131
Met Cys Cys Trp Ile Trp Phe Ala Ser Ile Leu Leu Arg Ile Phe Ala
1 5 10 15
Leu Met Phe Ile Arg Asp Ile Gly Leu Lys Phe Ser Phe Phe Val Val
20 25 30
Ser Leu Pro Gly Phe Gly Ile Arg Met Met Leu Ala Ser *
35 40 45

<210> 1132
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1132
Met Ser Gln Glu Pro Gly Arg Arg His Ser Lys Leu Thr Leu Thr Ala
1 5 10 15
Ser Arg Met Ala Pro Cys Leu Trp Val Trp Thr Ser Leu Cys Gln Ala
20 25 30
Trp Ser Met Ser Met Gly Ser Leu Ser Met Gln Thr Thr *
35 40 45

<210> 1133
<211> 87
<212> PRT
<213> Homo sapiens

<400> 1133
Met His Ser His Gly Val Ser Tyr Trp Thr Val Arg Thr Val Ile Trp
1 5 10 15
Pro Ile Ser Ser Leu Val Ser Lys Ile Thr Thr Trp Glu Phe Asn Glu
20 25 30
Val Thr Ser Met Ser Glu His Leu Lys Ser Cys Pro Phe Asn Ile Val
35 40 45
Glu His Lys Ser Asp Pro Ile Leu Leu Thr Ser Met Cys His Pro Arg

```
     50                  55                  60
Glu Gln Ala Arg Glu Ser Leu Leu Ser Thr Phe Arg Ile Arg Pro Arg
 65                  70                  75                  80
Gly Arg Tyr Val Ser Tyr  *
                    85  86


     &lt;210&gt; 1134
     &lt;211&gt; 57
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens


     &lt;400&gt; 1134
Met Glu Ala His Gln Ser Phe Lys His Lys Ser Cys Thr Trp Ala Ile
  1               5                  10                  15
Thr Val Trp Phe His Phe Val Cys Phe Leu Asn Thr Phe Ser Cys Phe
             20                  25                  30
Phe Asn Lys Leu Ser Pro Ile Leu Glu Ser Leu Val Val Gly Ser Ile
         35                  40                  45
Ser Arg His Leu Leu Arg Glu Leu  *
     50                  55  56


     &lt;210&gt; 1135
     &lt;211&gt; 57
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens


     &lt;400&gt; 1135
Met Glu Ala His Gln Ser Phe Lys His Lys Ser Cys Thr Trp Ala Ile
  1               5                  10                  15
Thr Val Trp Phe His Phe Val Cys Phe Leu Asn Thr Phe Ser Cys Phe
             20                  25                  30
Phe Asn Lys Leu Ser Pro Ile Leu Glu Ser Leu Val Val Gly Ser Ile
         35                  40                  45
Ser Arg His Leu Leu Arg Glu Leu  *
     50                  55  56


     &lt;210&gt; 1136
     &lt;211&gt; 105
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens


     &lt;400&gt; 1136
Met Pro Phe Ala Gln Thr Gly Leu Gln Leu Leu Leu Arg Leu Cys Arg
  1               5                  10                  15
Val Leu His Val Leu Arg Leu Leu Gly Met Leu Arg Glu Gln Met His
             20                  25                  30
Leu Leu Arg Glu Lys Leu Leu Asp Leu Leu Pro Pro Glu Leu Cys Gln
         35                  40                  45
Arg Val Pro Arg Ala Ala Thr Ala Lys Gly His Lys Arg Arg Ala Ala
     50                  55                  60
```

```
Ala Val Pro Asp Asp Gly Thr Asp Leu Leu Pro Gln Gly Met Arg Thr
 65                 70                  75                  80
Ala Cys Thr Thr Arg Arg Ile Phe Lys Tyr Asn Thr Glu Pro Phe Ala
                85                  90                  95
Ala Phe Leu Phe Ile Leu Asn Met  *
            100             104
```

<210> 1137
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1137

```
Met Val Gly Phe Tyr Leu Gln Ser Val Leu Tyr Phe Tyr Phe Ser Gln
  1               5                  10                  15
Leu Ile Tyr Leu Gly Asp His Ala Lys Ser Val Asn Ile Val Thr Ser
            20                  25                  30
Phe Ile Leu Thr Ala Ala Tyr Val Asn Asn Ser Lys Met His His Thr
        35                  40                  45
Val Phe Asn  *
    50  51
```

<210> 1138
<211> 187
<212> PRT
<213> Homo sapiens

<400> 1138

```
Met Gln Pro Ile Val Ala Lys Ala Leu Val Val Leu Leu Glu Val His
  1               5                  10                  15
Pro Leu Gln Asp Gln Ala Glu Ser Gly Arg Leu Gly His Val His Leu
            20                  25                  30
Leu Cys Ala Pro Ala Ala Leu Gln His Ala Leu Arg Gly Ile Thr Leu
        35                  40                  45
His Asn Gly His His Gln Ala Asp His Leu Pro Asp Leu Met His His
    50                  55                  60
Glu Ala Leu Ala Leu His Pro Asp His Arg Lys Leu Gln Ala Leu Pro
 65                 70                  75                  80
His Lys Gly Phe Leu Ala Val His Leu Gln Asp Val Ala Ala Gly Thr
                85                  90                  95
Gly Ile Leu Arg Pro Leu Leu Arg Gly Glu Ile Val Glu Val Val Arg
            100                 105                 110
Ala Leu Val Ala Gly Gln Glu Pro Val Asp Leu Leu Gln Arg Leu Gly
        115                 120                 125
Ala Gln Ala Val Gly Leu Ile Leu Asn Val Pro Val Leu Val Arg Lys
    130                 135                 140
Gly Lys Arg Gly Gln Gln Val Ala Ile Gly Pro Gly Ile Thr Ser Val
145                 150                 155                 160
Leu Gly Val Lys Pro Ala Arg Asp Pro Leu Gln Ser Gln Asn Pro Asn
                165                 170                 175
Val Arg Gly Lys Val Ala Val Asp Leu Phe  *
            180                 185 186
```

<210> 1139
<211> 109
<212> PRT
<213> Homo sapiens

<400> 1139
Met Trp Gln Lys Ser Leu Leu Ile Leu Ser Phe Arg Val Ser Phe Pro
1 5 10 15
Leu Phe Leu Thr Tyr Asn Tyr Lys Leu Leu Ser Ile Arg Arg Thr Arg
20 25 30
Pro Leu Ser Ser Phe Phe Ser Lys Leu Leu Gln Ile Ala Val Asn Ser
35 40 45
Ile Asn Ser Leu Phe Ser Ala Gly Lys Val Ala Phe Ser Lys His Val
50 55 60
Cys Leu Leu Pro Gly Gly Leu Lys Ser Met Ile Tyr Cys Ser Ser Met
65 70 75 80
Cys Leu Lys Gln Leu Leu Arg Ser Phe Lys Gln Glu Ser Ser Lys Gly
85 90 95
Ser Val Leu Ile Met Val Leu Val Phe Leu Gln Ile *
100 105 108

<210> 1140
<211> 83
<212> PRT
<213> Homo sapiens

<400> 1140
Met Pro Ala Pro Thr Ala Trp Leu Leu Pro Ala Val Ser Thr Cys Ser
1 5 10 15
Asn Leu Arg Ala Lys Ala Gly Val Ile Leu Gly Thr Ile Thr Thr Arg
20 25 30
Pro Tyr Val His Thr Trp Gly Ser Ala Asp Met Ala Thr Pro Tyr His
35 40 45
Leu Gly Pro Phe Trp Thr Leu Gly Thr Asp Lys His Arg Arg Glu Ala
50 55 60
Asn Arg Gly Gln Arg Ala Ile Trp Gly Trp Pro Thr Gly Pro Pro Trp
65 70 75 80
His Leu *
82

<210> 1141
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1141
Met Tyr Gln Trp Gly Ser Ser Ile Ile Leu Ile Leu Trp Pro Leu Ser
1 5 10 15
Met Asn Ile Gly Cys Tyr Ser Ile Tyr Leu Lys Met Val Met Leu Leu
20 25 30

Ser Ser Lys Phe Ser Trp Lys Ser Phe Ser Lys Leu Gln Phe Leu Leu
35 40 45
Leu Leu Lys Phe Arg Tyr Met Cys Ile *
50 55 57

<210> 1142
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1142
Met Asn Pro His Leu Gly Val Phe Leu Val Leu Val Ser Phe Phe Leu
1 5 10 15
Ser Leu Leu Asp Ser Gln Leu His Ser Trp Ile Val Leu His Asn Ser
20 25 30
Pro Ser Ser Arg Met Trp Lys Ser Ile Ile Phe Phe Leu *
35 40 45

<210> 1143
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1143
Met Leu Trp Ala Leu Ile Arg Ala Ala Leu Ala Gln Leu His Thr Glu
1 5 10 15
Glu Pro Lys Lys Arg Lys Glu Glu Lys Met Ser Pro Ala Leu Ser Pro
20 25 30
Pro Leu Pro Ser Val Pro Ile Ser Leu Gly Gln Asn Asn Arg Lys Arg
35 40 45
Arg Ser His Leu Ser Leu Leu Leu Gln *
50 55 57

<210> 1144
<211> 147
<212> PRT
<213> Homo sapiens

<400> 1144
Met Ala Tyr Thr Met Ile Pro Val Leu His Phe Phe Cys Cys Glu Thr
1 5 10 15
Ser Ser Leu Val Arg Thr Lys Val Val Trp Glu Ala Ile Asn Met Val
20 25 30
Phe Ala Lys Ser Met Asn Gly Gly Pro Asp Arg Cys Ile Ala Val Arg
35 40 45
Gln Val Lys Phe Leu Phe Arg Lys Val Ser Phe Ser Glu Lys Ile Asp
50 55 60
His Cys Pro Leu His Asp Gly Asn Ile Leu Leu Pro Gly Pro Trp Glu
65 70 75 80
Met Ala Pro Tyr Trp Gly Leu Asn Ile Ser Leu Cys His Leu Gln Phe

```
                85                      90                      95
Arg His Ser Ile Val Ser Leu Ala Arg Cys Ser Leu Gly Glu Gly Gln
            100                     105                     110
Ser Met Leu Trp Cys Pro Cys Leu Thr Ser Ile Ser Val Asp Met Ala
        115                     120                     125
Thr Leu Tyr Ile Asn Ala Ser Ser Ser Leu Ser Ser Lys Gly Lys Lys
    130                     135                     140
Ala Asp  *
145 146
```

```
     <210> 1145
     <211> 103
     <212> PRT
     <213> Homo sapiens


     <400> 1145
Met Ala Trp Ile Pro Leu Phe Leu Gly Val Leu Ala Tyr Cys Thr Gly
  1               5                  10                  15
Ser Val Ala Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ser
            20                  25                  30
Pro Gly Lys Thr Ala Ser Ile Thr Cys Ser Gly Asp Lys Leu Gly Asp
        35                  40                  45
Lys Tyr Ala Ser Trp Tyr Gln Gln Lys Ala Gly Gln Ser Pro Val Leu
    50                  55                  60
Val Ile Tyr Glu Asp Ser Arg Arg Pro Ser Gly Ile His Lys Arg Phe
65                  70                  75                  80
Tyr Gly Ser Asn Ser Gly Thr Thr Ala Thr Leu Thr Ile Ser Gly Thr
                85                  90                  95
Gln Ala Met Asp Glu Gly  *
            100     102
```

```
     <210> 1146
     <211> 77
     <212> PRT
     <213> Homo sapiens


     <400> 1146
Met Pro Leu Leu His Gly Val Tyr Leu Ala Arg Arg Ser Leu Ile Cys
  1               5                  10                  15
Ile Ser Phe Cys His Leu Cys Val Leu Ser Ile Gly Leu Arg Val Ile
            20                  25                  30
Val Cys Val Val Gly Ile Ser Glu Asp Arg Lys Arg Ser Ala Ser Ala
        35                  40                  45
Pro Thr Leu Gly Ile Val Pro Leu His Ala Ser Leu His Gln His Cys
    50                  55                  60
Ala Pro Asn Gln Ser Asn Pro Cys Ser Trp His Leu  *
65                  70                  75  76
```

```
     <210> 1147
     <211> 118
     <212> PRT
```

<213> Homo sapiens

<400> 1147

```
Met Asn Pro Ser Ala Ser Leu Val Cys Leu Leu Phe Ala Phe Ser Ser
 1               5                  10                  15
Cys Arg Ile Trp Ser Val Leu Cys Gln Leu Cys Val Pro Ser Pro Trp
            20                  25                  30
Pro Ser Pro Leu Cys Leu Cys Pro Gln Thr Asp Val Ala Pro Ile Cys
        35                  40                  45
Ala Val Gln Pro Ser Leu Phe Cys Leu Gly Ser Arg Glu Pro Leu Trp
    50                  55                  60
Thr Val Leu Val Gly Ser Cys Pro Leu Arg Ala Phe Thr Asn Leu Ser
65                  70                  75                  80
Val Arg Pro Pro Pro Gly His His Ser Ile His Leu Leu Thr Trp Leu
                85                  90                  95
Ala Ser Ser Ser Ala Ala Ala Thr Thr Ala Ala Ser Thr Ala Ser Gly
            100                 105                 110
Ala Pro His Ser Val  *
        115     117
```

<210> 1148
<211> 399
<212> PRT
<213> Homo sapiens

<400> 1148

```
Met Trp Ala Ala Val Gly Gly Phe Leu Phe Ala Pro Arg Cys Phe Leu
 1               5                  10                  15
Leu Pro Trp Pro Leu Arg Ala Pro Leu Ser Ser Leu Phe Val Leu Pro
            20                  25                  30
Arg Leu Leu Leu Trp Pro Ile Pro Tyr Pro Val Leu Ala Ser Val Cys
        35                  40                  45
Pro Cys Val Pro Gly Gly Arg Phe Phe Gly Pro Leu Tyr Pro Arg Asp
    50                  55                  60
Leu Arg Leu Leu Arg Cys Val Pro Gly Glu Leu Thr Gly Ala Ala Pro
65                  70                  75                  80
Arg Thr Leu Pro Gly Cys Asp Leu Asn Cys Leu Gly Leu Gly Arg Glu
                85                  90                  95
Ala Ala Val Pro Arg Leu Leu Arg Leu Thr Arg Asp Pro Ala Arg Pro
            100                 105                 110
Ser Cys Arg Thr Leu Gly Val His Ala Val Pro Arg Arg Ala Phe Gly
        115                 120                 125
Phe Tyr Ala Val Pro Arg Arg Asp Pro Arg Phe Tyr Ala Val Pro Arg
    130                 135                 140
Arg Val Pro Arg Leu Tyr Ala Val Pro His Pro Ala Leu Arg Val Tyr
145                 150                 155                 160
Ala Val Pro Arg Arg Thr Phe Arg Val Tyr Ala Val Pro His Pro Ala
                165                 170                 175
Leu Arg Val Tyr Ala Val Pro Arg Arg Ala Leu Gly Leu Tyr Val Val
            180                 185                 190
Pro Gln Arg Ala Leu Arg Val Tyr Ala Val Pro Arg Arg Thr Phe Arg
        195                 200                 205
Val Tyr Ala Val Pro His Pro Ala Leu Arg Leu Tyr Ala Val Ala Arg
    210                 215                 220
Arg Ala Leu Arg Phe Tyr Val Val Pro Gln Arg Ala Leu Arg Val Tyr
```

```
225                 230                 235                 240
Ala Val Pro Arg Leu Pro Gly Arg Ala Thr Phe Arg Asp Leu Arg Pro
                245                 250                 255
Leu Leu Arg Leu Leu Leu Pro Leu Gly Gly Arg Arg Val Leu Gly Leu
            260                 265                 270
Pro Leu Ser Leu Pro Ala Gly Leu Ala Leu Arg Ala Ala Ser Arg Ala
        275                 280                 285
Arg Pro Leu His Leu Leu Arg Ala Ala Cys Leu Leu Pro Ser Leu Gly
    290                 295                 300
His Leu Gly Thr Leu Arg Gly Ser Leu Leu Gly Leu Ser Leu Ala Val
305                 310                 315                 320
Arg Pro Pro Arg Ala Pro Arg Leu Gly Leu Arg Ala Pro Val Trp Pro
                325                 330                 335
Ala Ala Ser Cys Leu Leu His Ser Gly Gly Ala Pro Arg Arg Leu Leu
            340                 345                 350
Cys Ala Leu Ala Pro Leu Arg Pro Phe Cys Leu Pro Ala Arg Gly Ser
        355                 360                 365
Trp Leu Ser Gly Ser Leu Ser Gln Arg Arg Gly Asp Leu Arg Arg Pro
    370                 375                 380
Leu Gly Thr Arg Gly Asn Pro Leu Arg Leu Arg Gly Leu Gly His
385                 390                 395             399
```

<210> 1149
<211> 67
<212> PRT
<213> Homo sapiens

<400> 1149

```
Met Pro Ser Tyr Phe Lys Thr Cys Ser Leu Phe Thr Leu Leu Ser Ser
 1               5                  10                  15
Val Phe Leu Val Cys Ile Trp Ile Phe Lys Thr Asn Ile Lys Ser Ser
            20                  25                  30
Val Ser Glu Ser Pro Pro Asp Ser Gly Leu Gly Gln Val Thr Ala Val
        35                  40                  45
Tyr Gln Val Gln Cys Leu Cys Trp Ala Lys Asp Cys Asn Tyr Pro Ile
    50                  55                  60
Cys Ser  *
 65 66
```

<210> 1150
<211> 70
<212> PRT
<213> Homo sapiens

<400> 1150

```
Met Leu Val Ser Lys Leu Met Leu Gln Ile Val Met Ala Val Pro His
 1               5                  10                  15
Tyr Ile Met Pro Val Glu Met Lys Asn Gln Ser Leu Ile Pro Leu Leu
            20                  25                  30
Leu Glu Ala Arg Ala Asp Pro Thr Ile Lys Asn Lys His Gly Glu Ser
        35                  40                  45
Ser Leu Asp Ile Ala Arg Arg Leu Lys Phe Ser Gln Ile Glu Leu Met
    50                  55                  60
```

```
Leu Arg Lys Ala Leu  *
 65             69


      <210> 1151
      <211> 48
      <212> PRT
      <213> Homo sapiens


      <400> 1151
Met Gly Ala Gly Cys Thr Pro Val Val Leu Gly Ala Ala Leu Trp Leu
  1               5                  10                  15
Trp Arg Trp Phe Ser Arg Trp Gly Leu Gly Gly Leu Cys Trp Arg Pro
             20                  25                  30
Cys Thr Cys Thr Pro Cys His Ser Ala Ser Pro Gly Ala Gly Arg  *
         35                  40                  45      47


      <210> 1152
      <211> 64
      <212> PRT
      <213> Homo sapiens


      <400> 1152
Met Lys Asp His Leu Glu Phe Pro Phe Leu Asp Leu Leu Asp Leu Thr
  1               5                  10                  15
Asp Ser Leu Gly Leu Leu Gly Phe Gln Gly Leu Leu Ala Leu Leu Ala
             20                  25                  30
Leu Thr Phe Leu Leu Val Met Arg Tyr Val Asn Gln Ala Leu Gln Ala
         35                  40                  45
Pro Gln Asp Leu Gln Val Ile Lys Asp Ser Lys Glu Asn Lys Glu  *
     50                  55                  60          63


      <210> 1153
      <211> 61
      <212> PRT
      <213> Homo sapiens


      <400> 1153
Met Thr Ala Arg Phe Leu Leu Ala Arg Pro Ala Tyr Ser Ser Ala Leu
  1               5                  10                  15
Leu Arg Gly Leu Gly Gly Pro Arg Thr Pro Leu Ile Gln Phe Ser Arg
             20                  25                  30
Cys Gly Met Met Ser Ile Arg Leu Leu Gly Leu Phe Pro Leu Cys Leu
         35                  40                  45
Cys Ser Val Leu Trp Phe Pro Gln Gln His Ser Leu  *
     50                  55                  60


      <210> 1154
      <211> 75
```

<212> PRT
<213> Homo sapiens

<400> 1154
Met Asp Ser Thr Phe Leu Ala Thr Arg Ala Val Arg Gly Gln Leu Tyr
1 5 10 15
Leu Trp Ile Ser Met Leu Thr Ile Ala Thr Gly Lys Leu Cys Ala Arg
20 25 30
Cys Tyr Pro Glu Asn Gln Asp His Ile Ile Gln Met Leu Pro Cys Ser
35 40 45
Pro Ala Ser Val Ile Leu His Leu Pro Trp Met Met Lys Phe Phe Leu
50 55 60
Ala Arg His Leu Ile Lys Trp Leu Glu Asn *
65 70 74

<210> 1155
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1155
Met Met Ala Lys Ser Val Arg Phe Cys Tyr Val Leu Phe Val Glu Glu
1 5 10 15
Ile Arg Phe Ala Val Leu Val Val Gln Arg Leu Ala Lys Ser Asp Leu
20 25 30
Trp Ala Lys Ser Gly Leu Leu Ser Ile Phe Ile Phe Ile Ser Lys Val
35 40 45
Leu Leu Lys Gln Thr His Leu Leu Val Cys Arg Met Tyr Ile Ala Ala
50 55 60
Phe Ala Leu *
65 67

<210> 1156
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1156
Met Ile Tyr Phe Leu Ser Thr Pro Leu Leu Leu Thr Leu Phe Asn Ile
1 5 10 15
Leu Met Thr Phe Phe Phe Val Ala Pro Pro Leu Asn Leu Leu Asn Lys
20 25 30
Thr His Phe Cys Phe Phe Ser Ser Tyr Ser Leu Lys Asp Phe Arg Cys
35 40 45
Pro Pro Pro Lys Leu Lys Phe Leu Leu His Pro *
50 55 59

<210> 1157
<211> 776
<212> PRT

<213> Homo sapiens

<400> 1157

```
Met Leu Phe Ile Val Thr Ala Leu Leu Cys Cys Gly Leu Cys Asn Gly
1               5                   10                  15
Val Leu Ile Glu Glu Thr Glu Ile Val Met Pro Thr Pro Lys Pro Glu
            20                  25                  30
Leu Trp Ala Glu Thr Asn Phe Pro Leu Ala Pro Trp Lys Asn Leu Thr
        35                  40                  45
Leu Trp Cys Arg Ser Pro Ser Gly Ser Thr Lys Glu Phe Val Leu Leu
    50                  55                  60
Lys Asp Gly Thr Gly Trp Ile Ala Thr Arg Pro Ala Ser Glu Gln Val
65                  70                  75                  80
Arg Ala Ala Phe Pro Leu Gly Ala Leu Thr Gln Ser His Thr Gly Ser
                85                  90                  95
Tyr His Cys His Ser Trp Glu Glu Met Ala Val Ser Glu Pro Ser Glu
            100                 105                 110
Ala Leu Glu Leu Val Gly Thr Asp Ile Leu Pro Lys Pro Val Ile Ser
        115                 120                 125
Ala Ser Pro Thr Ile Arg Gly Gln Glu Leu Gln Leu Arg Cys Lys Gly
    130                 135                 140
Trp Leu Ala Gly Met Gly Phe Ala Leu Tyr Lys Glu Gly Glu Gln Glu
145                 150                 155                 160
Pro Val Gln Gln Leu Gly Ala Val Gly Arg Glu Ala Phe Phe Thr Ile
                165                 170                 175
Gln Arg Met Glu Asp Lys Asp Glu Gly Asn Tyr Ser Cys Arg Thr His
            180                 185                 190
Thr Glu Lys Arg Pro Phe Lys Trp Ser Glu Pro Ser Glu Pro Leu Glu
        195                 200                 205
Leu Val Ile Lys Glu Met Tyr Pro Lys Pro Phe Phe Lys Thr Trp Ala
    210                 215                 220
Ser Pro Val Val Thr Pro Gly Ala Arg Val Thr Phe Asn Cys Ser Thr
225                 230                 235                 240
Pro His Gln His Met Ser Phe Ile Leu Tyr Lys Asp Gly Ser Glu Ile
                245                 250                 255
Ala Ser Ser Asp Arg Ser Trp Ala Ser Pro Gly Ala Ser Ala Ala His
            260                 265                 270
Phe Leu Ile Ile Ser Val Gly Ile Gly Asp Gly Gly Asn Tyr Ser Cys
        275                 280                 285
Arg Tyr Tyr Asp Phe Ser Ile Trp Ser Glu Pro Ser Asp Pro Val Glu
    290                 295                 300
Leu Val Val Thr Glu Phe Tyr Pro Lys Pro Thr Leu Leu Ala Gln Pro
305                 310                 315                 320
Gly Pro Val Val Phe Pro Gly Lys Ser Val Ile Leu Arg Cys Gln Gly
                325                 330                 335
Thr Phe Gln Gly Met Arg Phe Ala Leu Leu Gln Glu Gly Ala His Val
            340                 345                 350
Pro Leu Gln Phe Arg Ser Val Ser Gly Asn Ser Ala Asp Phe Leu Leu
        355                 360                 365
His Thr Val Gly Ala Glu Asp Ser Gly Asn Tyr Ser Cys Ile Tyr Tyr
    370                 375                 380
Glu Thr Thr Met Ser Asn Arg Gly Ser Tyr Leu Ser Met Pro Leu Met
385                 390                 395                 400
Ile Trp Val Thr Asp Thr Phe Pro Lys Pro Trp Leu Phe Ala Glu Pro
                405                 410                 415
Ser Ser Val Val Pro Met Gly Gln Asn Val Thr Leu Trp Cys Arg Gly
            420                 425                 430
Pro Val His Gly Val Gly Tyr Ile Leu His Lys Glu Gly Glu Ala Thr
```

```
            435                 440                 445
Ser Met Gln Leu Trp Gly Ser Thr Ser Asn Asp Gly Ala Phe Pro Ile
    450                 455                 460
Thr Asn Ile Ser Gly Thr Ser Met Gly Arg Tyr Ser Cys Cys Tyr His
465                 470                 475                 480
Pro Asp Trp Thr Ser Ser Ile Lys Ile Gln Pro Ser Asn Thr Leu Glu
                485                 490                 495
Leu Leu Val Thr Gly Leu Leu Pro Lys Pro Ser Leu Leu Ala Gln Pro
            500                 505                 510
Gly Pro Met Val Ala Pro Gly Glu Asn Met Thr Leu Gln Cys Gln Gly
        515                 520                 525
Glu Leu Pro Asp Ser Thr Phe Val Leu Leu Lys Glu Gly Ala Gln Glu
    530                 535                 540
Pro Leu Glu Gln Gln Arg Pro Ser Gly Tyr Arg Ala Asp Phe Trp Met
545                 550                 555                 560
Pro Ala Val Arg Gly Glu Asp Ser Gly Ile Tyr Ser Cys Val Tyr Tyr
                565                 570                 575
Leu Asp Ser Thr Pro Phe Ala Ala Ser Asn His Ser Asp Ser Leu Glu
            580                 585                 590
Ile Trp Val Thr Asp Lys Pro Pro Lys Pro Ser Leu Ser Ala Trp Pro
        595                 600                 605
Ser Thr Met Phe Lys Leu Gly Lys Asp Ile Thr Leu Gln Cys Arg Gly
    610                 615                 620
Pro Leu Pro Gly Val Glu Phe Val Leu Glu His Asp Gly Glu Glu Ala
625                 630                 635                 640
Pro Gln Gln Phe Ser Glu Asp Gly Asp Phe Val Ile Asn Asn Val Glu
                645                 650                 655
Gly Lys Gly Ile Gly Asn Tyr Ser Cys Ser Tyr Arg Leu Gln Ala Tyr
            660                 665                 670
Pro Asp Ile Trp Ser Glu Pro Ser Asp Pro Leu Glu Leu Val Gly Ala
        675                 680                 685
Ala Gly Pro Val Ala Gln Glu Cys Thr Val Gly Asn Ile Val Arg Ser
    690                 695                 700
Ser Leu Ile Val Val Val Val Val Ala Leu Gly Val Val Leu Ala Ile
705                 710                 715                 720
Glu Trp Lys Lys Trp Pro Arg Leu Arg Thr Arg Gly Ser Glu Thr Asp
                725                 730                 735
Gly Arg Asp Gln Thr Ile Ala Leu Glu Glu Cys Asn Gln Glu Gly Glu
            740                 745                 750
Pro Gly Thr Pro Ala Asn Ser Pro Ser Ser Thr Ser Gln Arg Ile Ser
        755                 760                 765
Val Glu Leu Pro Val Pro Ile  *
    770                 775


     <210> 1158
     <211> 80
     <212> PRT
     <213> Homo sapiens


     <400> 1158
Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala Leu Ala Phe
 1               5                  10                  15
Leu Ser Gly Tyr Tyr Val Thr Leu Ala Ala Gln Ile Leu Ala Val Leu
            20                  25                  30
Leu Pro Pro Val Met Leu Leu Ile Asp Gly Asn Val Ala Tyr Trp His
        35                  40                  45
```

Asn Thr Arg Arg Val Glu Phe Trp Asn Gln Met Lys Leu Leu Gly Glu
50 55 60
Ser Val Gly Ile Phe Gly Thr Ala Val Ile Leu Ala Thr Asp Gly *
65 70 75 79

<210> 1159
<211> 132
<212> PRT
<213> Homo sapiens

<400> 1159
Met Ser Ser Gly Thr Glu Leu Leu Trp Pro Gly Ala Ala Leu Leu Val
1 5 10 15
Leu Leu Gly Val Ala Ala Ser Leu Cys Val Arg Cys Ser Arg Pro Gly
20 25 30
Ala Lys Arg Ser Glu Lys Ile Tyr Gln Gln Arg Ser Leu Arg Glu Asp
35 40 45
Gln Gln Ser Phe Thr Gly Ser Arg Thr Tyr Ser Leu Val Gly Gln Ala
50 55 60
Trp Pro Gly Pro Leu Ala Asp Met Ala Pro Thr Arg Lys Asp Lys Leu
65 70 75 80
Leu Gln Phe Tyr Pro Ser Leu Glu Asp Pro Ala Ser Ser Arg Tyr Gln
85 90 95
Asn Phe Ser Lys Gly Ser Arg His Gly Ser Glu Glu Ala Tyr Ile Asp
100 105 110
Pro Thr Ala Ile Lys Tyr Phe Leu Thr Gln Ala Thr Ala Ser Ile Ile
115 120 125
Leu Leu Ile Ala
130 132

<210> 1160
<211> 167
<212> PRT
<213> Homo sapiens

<400> 1160
Met Val Gly Leu Gly Gly Met Ser Gln Leu Leu Leu Ala Ser Leu Leu
1 5 10 15
Pro Pro Val Pro Gln Gly Ser Pro Thr Arg Arg Lys Leu Pro Ala Ser
20 25 30
Leu Leu Val Ser Thr Ala Leu Ile Ser Pro Val Cys Val Arg Gly Trp
35 40 45
Met Trp Gln Asn Leu Gln Asn Arg Ile His Gly Ser His Thr Ser Ala
50 55 60
Arg Arg Val Pro Ser Leu Pro Gly Ala Gly Gln Val Gly Val Arg Trp
65 70 75 80
Glu Ala Gly Pro Ala Cys Arg Thr Gln Pro Ser Pro Gln Asn Leu Ala
85 90 95
Pro Arg Pro His Pro Ser Ala Ala Gln Leu Ile Glu Asn Ala Ala Leu
100 105 110
Arg Ser Ala Met Ser Gly Glu Arg Leu Phe Pro Glu Gly Gln Glu His
115 120 125
Leu Gly Pro Leu Val Ala Pro Arg Val Pro Met Gly Gly Ala Leu Cys

```
    130                 135                 140
Pro Pro Leu Pro Ser Leu Ser Cys Ala Ile Cys Lys Val Gly Ala Ala
145                 150                 155                 160
Arg Glu Ala Gly Gly Arg  *
                165 166


     <210> 1161
     <211> 84
     <212> PRT
     <213> Homo sapiens


     <400> 1161
Met Ala Asn Leu Leu Leu Leu Ile Val Pro Ile Leu Ile Ala Met Ala
 1               5                  10                  15
Phe Leu Met Leu Thr Glu Arg Lys Ile Leu Gly Tyr Ile Gln Leu Arg
            20                  25                  30
Lys Gly Pro Asn Val Val Gly Pro Tyr Gly Leu Leu Gln Pro Phe Ala
        35                  40                  45
Asp Ala Ile Lys Leu Phe Thr Lys Glu Pro Leu Lys Pro Ala Thr Ser
    50                  55                  60
Ala Ile Thr Leu Tyr Ile Thr Ala Pro Thr Leu Ala Leu Thr Ile Ala
65                  70                  75                  80
Leu Leu Leu  *
        83


     <210> 1162
     <211> 80
     <212> PRT
     <213> Homo sapiens


     <400> 1162
Met Lys Ala Trp Cys Phe Ser Asn Lys Phe Trp Leu Ala Val Leu Pro
 1               5                  10                  15
Ile Cys Cys Ala Ser Ala Ala Tyr Leu Gly Gln Val Trp Leu Leu Ile
            20                  25                  30
Tyr Ala Trp Arg Ala Glu Thr Ser Leu Glu Thr Glu Phe Tyr Thr Ile
        35                  40                  45
Pro Leu Ser Trp Leu Tyr Tyr Phe Thr Thr Thr Tyr Tyr Leu Met Phe
    50                  55                  60
Leu Pro Ser Leu Lys Phe Ala Gln Asp Ser Pro Pro Arg Ala Phe  *
65                  70                  75                  79


     <210> 1163
     <211> 71
     <212> PRT
     <213> Homo sapiens


     <400> 1163
Met Tyr Gly Leu Lys Ile Leu Ser His Leu Trp Val Leu Leu Ile Leu
 1               5                  10                  15
```

Ser Leu Leu Leu Phe Leu Arg Lys Ser Phe Lys Phe Tyr Ala Val Ser
20 25 30
Phe Val Cys Phe Ala Phe Val Ala Phe Trp Asn Asn Leu Gln Lys Ile
35 40 45
Ile Ala Gln Ala Asn Val Ile Gln Ser Pro Ser Ile Phe Pro Cys Ser
50 55 60
Ser Ser Thr Phe Lys Leu *
65 70

<210> 1164
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1164
Met Glu Thr Ala Val Ile Gly Val Val Val Val Leu Phe Val Val Thr
1 5 10 15
Val Ala Ile Thr Cys Val Leu Cys Cys Phe Ser Cys Asp Ser Arg Ala
20 25 30
Gln Asp Pro Gln Gly Gly Pro Gly Arg Ser Phe Thr Val Ala Thr Phe
35 40 45
Arg Gln Glu Ala Ser Leu Phe Thr
50 55 56

<210> 1165
<211> 97
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(97)
<223> Xaa = any amino acid or nothing

<400> 1165
Met Lys Met Leu Cys Gly Leu Leu Arg Thr Val Gln Gly Val Arg Phe
1 5 10 15
Pro Gln Leu Thr Arg Ile His Gly Pro Ser Thr Gln Gly His Gln Leu
20 25 30
Leu Leu Leu Trp Val Gly Val Leu Gln Val Gly Xaa Ser Ser Leu Gly
35 40 45
Leu Gln Asn Asp Leu Met Gly Pro Ser Leu Gly Arg Gly Pro Pro Pro
50 55 60
Leu Ala Ala Ser Thr Arg Cys Arg His Val Ala Gln Leu Gly Val Gly
65 70 75 80
Leu Ser Lys Thr Trp Gln Pro Ser Thr His Gly Ile Ala Ser Ala Pro
85 90 95 96
*

<210> 1166
<211> 48

<212> PRT
<213> Homo sapiens

<400> 1166
```
Met Leu Ile Phe Val Phe Leu Phe Ser Tyr Leu Ile Ala Leu Ala Gly
 1               5                  10                  15
Thr Phe Ser Pro Arg Leu Asn Arg Ser Gly Glu Ser Val His Pro Phe
            20                  25                  30
Ala Leu His Pro Val Leu Arg Arg Lys His Pro Val Ile His Leu  *
        35                  40                  45      47
```

<210> 1167
<211> 274
<212> PRT
<213> Homo sapiens

<400> 1167
```
Met Glu Ala Pro Leu Ser His Leu Glu Ser Arg Tyr Leu Pro Ala His
 1               5                  10                  15
Phe Ser Pro Leu Val Phe Phe Leu Leu Leu Ser Ile Met Met Ala Cys
            20                  25                  30
Cys Leu Val Ala Phe Phe Val Leu Gln Arg Gln Pro Arg Cys Trp Glu
        35                  40                  45
Ala Ser Val Glu Asp Leu Leu Asn Asp Gln Val Thr Leu His Ser Ile
    50                  55                  60
Arg Pro Arg Glu Glu Asn Asp Leu Gly Pro Ala Gly Thr Val Asp Ser
65                  70                  75                  80
Ser Gln Gly Gln Gly Tyr Leu Glu Glu Lys Ala Ala Pro Cys Cys Pro
                85                  90                  95
Ala His Leu Ala Phe Ile Tyr Thr Leu Val Ala Phe Val Asn Ala Leu
            100                 105                 110
Thr Asn Gly Met Leu Pro Ser Val Gln Thr Tyr Ser Cys Leu Ser Tyr
        115                 120                 125
Gly Pro Val Ala Tyr His Leu Ala Ala Thr Leu Ser Ile Val Ala Asn
    130                 135                 140
Pro Leu Ala Ser Leu Val Ser Met Phe Leu Pro Asn Arg Ser Leu Leu
145                 150                 155                 160
Phe Leu Gly Val Leu Ser Val Leu Gly Thr Cys Phe Gly Gly Tyr Asn
                165                 170                 175
Met Ala Met Ala Val Met Ser Pro Cys Pro Leu Leu Gln Gly His Trp
            180                 185                 190
Gly Gly Glu Val Leu Ile Val Ser Ile Arg Pro Val Ala Ser Trp Val
        195                 200                 205
Leu Phe Ser Gly Cys Leu Ser Tyr Val Lys Val Met Leu Gly Val Val
    210                 215                 220
Leu Arg Asp Leu Ser Arg Ser Ala Leu Leu Trp Cys Gly Ala Ala Val
225                 230                 235                 240
Gln Leu Gly Ser Leu Leu Gly Ala Leu Leu Met Phe Pro Leu Val Asn
                245                 250                 255
Val Leu Arg Leu Phe Ser Ser Ala Asp Phe Cys Asn Leu His Cys Pro
            260                 265                 270
Ala  *
273
```

<210> 1168
<211> 230
<212> PRT
<213> Homo sapiens

<400> 1168
Met Arg Ile Cys Asn Leu Ile Ser Met Met Leu Leu Leu Cys His Trp
1 5 10 15
Asp Gly Cys Leu Gln Phe Leu Val Pro Met Leu Gln Asp Phe Pro Arg
20 25 30
Asn Cys Trp Val Ser Ile Asn Gly Met Val Asn His Ser Trp Ser Glu
35 40 45
Leu Tyr Ser Phe Ala Leu Phe Lys Ala Met Ser His Met Leu Cys Ile
50 55 60
Gly Tyr Gly Arg Gln Ala Pro Glu Ser Met Thr Asp Ile Trp Leu Thr
65 70 75 80
Met Leu Ser Met Ile Val Gly Ala Thr Cys Tyr Ala Met Phe Ile Gly
85 90 95
His Ala Thr Ala Leu Ile Gln Ser Leu Asp Ser Ser Arg Arg Gln Tyr
100 105 110
Gln Glu Lys Tyr Lys Gln Val Glu Gln Tyr Met Ser Phe His Lys Leu
115 120 125
Pro Ala Asp Phe Arg Gln Lys Ile His Asp Tyr Tyr Glu His Arg Tyr
130 135 140
Gln Gly Lys Met Phe Asp Glu Asp Ser Ile Leu Gly Glu Leu Asn Gly
145 150 155 160
Pro Leu Arg Glu Glu Ile Val Asn Phe Asn Cys Arg Lys Leu Val Ala
165 170 175
Ser Met Pro Leu Phe Ala Asn Ala Asp Pro Asn Phe Val Thr Ala Met
180 185 190
Leu Thr Lys Leu Lys Phe Glu Val Phe Gln Pro Gly Asp Tyr Ile Ile
195 200 205
Pro Arg Arg His His Arg Glu Glu Asp Val Leu His Pro Ala Arg Arg
210 215 220
Gly Gln Arg Ala His *
225 229

<210> 1169
<211> 213
<212> PRT
<213> Homo sapiens

<400> 1169
Met Ala His Phe Thr Trp Ala His Leu Arg Val Leu Thr Leu Phe Leu
1 5 10 15
Leu Gln Val Gly Leu Leu Asp Asp Val His Gln Leu Leu Gly Pro Gln
20 25 30
Ala Asp Glu Asp Ser Leu Ser Ile Phe Thr Val Met Pro Ala Leu His
35 40 45
Gln Ser Gln Glu Gln Leu Gly Gly Ile Val Leu Glu Leu Gln His Gln
50 55 60
Ile His Ala Val Leu Ala Gln Gly Ala Asp Val Ile Glu Asp Gln Cys
65 70 75 80
Gly Asp Asp Val Tyr Ala Ile Gly Leu Val Ser His Asn Ala Ser Leu

```
                    85                  90                  95
Val Leu Met Ala Gly Ala Leu Ala Val Leu Ser Glu Gly Leu Gln Gly
                100                 105                 110
Leu Asp Asp Glu Ala His Val Val Leu Ile Asp Val Glu Pro Gln Gln
            115                 120                 125
Pro Gln Ala Ala Arg Gly Ala Ala Ala His Asp Val Gln Glu Leu Gln
    130                 135                 140
Arg Leu Ala Tyr Gln Val Val Val Gly Phe Val Val Leu Thr Ala Gln
145                 150                 155                 160
Glu Val Leu Gln Val Pro Val Val Val Leu Thr Gln Gln Leu Gln Lys
                165                 170                 175
Ala Gln Asp Gly Leu His Asp Glu His Gly Cys Ala His Leu Thr Ala
            180                 185                 190
Leu His Thr Phe Ala His Leu Val Pro Pro Ala Gln Ala Gly Ala Gln
        195                 200                 205
Arg Val Ala Gly  *
    210     212
```

```
<210> 1170
<211> 51
<212> PRT
<213> Homo sapiens
```

```
<400> 1170
Met Tyr Ser Leu Val Leu Thr Phe Leu Val Ser Phe Cys Ala Leu Ser
  1               5                  10                  15
Lys Thr Phe Leu Asp His Trp Phe Gln Met Phe Ile Tyr Tyr Ile Leu
                20                  25                  30
Phe Lys Asp Ser Glu Ile Gly Phe Cys His Pro Leu Leu Tyr Val Leu
            35                  40                  45
Phe His  *
     50
```

```
<210> 1171
<211> 157
<212> PRT
<213> Homo sapiens
```

```
<400> 1171
Met Leu Val Pro Leu Asn Leu Cys Leu Gln Ser Thr Leu Ala Leu Val
  1               5                  10                  15
Ser Leu Pro Leu Pro Gly Ile Gly Arg Ala Phe Cys Glu Trp Leu Ser
                20                  25                  30
Gly Thr Phe Lys Ala Arg Arg Gln Gly Pro Lys Ala Lys Arg Glu Leu
            35                  40                  45
Trp Asp Val Pro Ser Pro Val Arg Gly Trp Pro Trp Gly Phe Arg Leu
     50                  55                  60
Arg Gly Val Pro Gly Pro Val Ser Pro Ala Phe Gly Pro Phe Gly Glu
 65                  70                  75                  80
Phe Gly Glu Glu Val Pro Thr Ala Arg Pro Gly Asp Val Arg Gly Ala
                85                  90                  95
Ala Leu Thr Phe Ile Val Gly Val Ser Ser Glu Val Ser Val Gln Arg
            100                 105                 110
```

Arg Ser Ala Gly Arg Ser His Arg Gly Arg Arg Arg Arg Ala Ser Cys
115 120 125
Thr Ala Ala Pro Gly Gly Gly Val Thr Arg Arg Trp Lys Glu Tyr Cys
130 135 140
Thr Gln Arg Ile Asn Asn Leu Val Lys Pro Phe Ser *
145 150 155 156

<210> 1172
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1172
Met Asn Pro Tyr Ile Ser Ile Ile Val Phe Ile Val Phe Leu Cys Ser
1 5 10 15
Glu Asn Tyr Pro Trp Asn Asn Met Leu Arg Ile Thr Gly Ser Ser Pro
20 25 30
Tyr Leu His Phe Leu Ser Val Leu Gly Val Leu Val Asn Ser Tyr Val
35 40 45
Leu Ile Leu Phe Asn Ser Glu Phe Leu Thr Gln His Phe Arg Glu Arg
50 55 60
Ile Gln Ala Gly *
65 68

<210> 1173
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1173
Met Cys Ser Leu Lys Phe Trp Ile Cys Phe Cys Gln Ala Val Ser Met
1 5 10 15
His Leu Cys Ala Thr Gln Leu Ser Val Ser Leu Pro Ala Gly Ile Ser
20 25 30
Met Phe Val Ser Gly Leu Val Cys Asp Ile Cys Val Trp Ser Gly Ser
35 40 45
Gly Met Thr His Pro Tyr Trp Ser Arg Met Arg Val Glu Met Met Val
50 55 60
Ala Gly Cys Phe Arg Glu Arg Asp Ala His *
65 70 74

<210> 1174
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1174
Met Leu Ser Ser Phe Phe Lys Ser Cys Phe Cys Val Ser Phe Trp Thr
1 5 10 15
Leu Ser Ile Ala Thr Ser Ser Asn Leu Leu Ile Phe Ser Ser Ala Ile

```
                20                  25                  30
Ser Asn Leu Leu Leu Ile Leu Ser Ser Val Phe Ser Ile Leu Asp Ile
            35                  40                  45
Val Val Phe Ile Thr Arg Ser Met Ile Trp Phe Cys Phe His Pro Cys
        50                  55                  60
Ile Tyr Ile Thr Cys Pro Val Phe His Ser Ala Ser  *
65                  70                  75  76


     <210> 1175
     <211> 59
     <212> PRT
     <213> Homo sapiens


     <400> 1175
Met Ser Phe Ala Phe Ser Leu Trp Tyr Pro Phe Leu Arg Asp Leu Arg
 1               5                  10                  15
Ser Cys Phe Lys Leu Ser Lys Leu Ser Cys His Ser Pro Ile Ser Phe
                20                  25                  30
Val Gln Tyr Thr Thr Met Ser Thr Arg Val Ser Cys Leu Asn Leu Leu
            35                  40                  45
Tyr Pro His Leu Arg Val Val Ser Ile His Ser
        50                  55              59


     <210> 1176
     <211> 55
     <212> PRT
     <213> Homo sapiens


     <400> 1176
Met His Leu Leu Cys Ser Gly His Lys Leu Cys Leu Cys Ile Val Tyr
 1               5                  10                  15
Ile Ser Phe Phe Leu Phe Phe Lys Val Tyr Gly Phe Cys Phe Leu His
                20                  25                  30
Ala Asn Ile Val Asn Tyr Thr Glu Asp Thr Thr Asp Ser Ile Tyr Lys
            35                  40                  45
Val Tyr Arg Asn Ile Ile  *
        50              54


     <210> 1177
     <211> 86
     <212> PRT
     <213> Homo sapiens


     <400> 1177
Met Leu Ser Met Leu Leu Arg Ala Val Phe Cys Cys Cys Arg Arg Leu
 1               5                  10                  15
His Leu Val Ser Ser Ile Leu Phe Cys Cys Ser Arg Asn Arg Thr Leu
                20                  25                  30
Ser Met Lys Glu Ala Asn Leu Leu Leu Arg Val Leu Ile Cys Ser Phe
            35                  40                  45
```

Ser Trp Val Arg Thr Ala Trp Met Leu Gly Ser Thr Ser Arg Thr Arg
50 55 60
Gly Leu Ser Arg Leu Trp Leu Thr Val Thr Ala Val Met Pro Pro Met
65 70 75 80
Pro Leu Ala Pro Pro *
85

<210> 1178
<211> 189
<212> PRT
<213> Homo sapiens

<400> 1178
Met Met Pro Leu Leu Ser Leu Ile Phe Ser Ala Leu Phe Ile Leu Phe
1 5 10 15
Gly Thr Val Ile Val Gln Ala Phe Ser Asp Ser Asn Asp Glu Arg Glu
20 25 30
Ser Ser Pro Pro Glu Lys Glu Glu Ala Gln Glu Lys Thr Gly Lys Thr
35 40 45
Glu Pro Ser Phe Thr Lys Glu Asn Ser Ser Lys Ile Pro Lys Lys Gly
50 55 60
Phe Val Glu Val Thr Glu Leu Thr Asp Val Thr Tyr Thr Ser Asn Leu
65 70 75 80
Val Arg Leu Arg Pro Gly His Met Asn Val Val Leu Ile Leu Ser Asn
85 90 95
Ser Thr Lys Thr Ser Leu Leu Gln Lys Phe Ala Leu Glu Val Tyr Thr
100 105 110
Phe Thr Gly Ser Ser Cys Leu His Phe Ser Phe Leu Ser Leu Asp Lys
115 120 125
His Arg Glu Trp Leu Glu Tyr Leu Leu Glu Phe Ala Gln Asp Ala Ala
130 135 140
Pro Ile Pro Asn Gln Tyr Asp Lys His Phe Met Glu Arg Asp Tyr Thr
145 150 155 160
Gly Tyr Val Leu Ala Leu Asn Gly His Lys Lys Tyr Phe Cys Leu Phe
165 170 175
Lys Pro Gln Lys Thr Val Glu Glu Gly Gly Lys Pro *
180 185 188

<210> 1179
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1179
Met Ile Cys Lys Tyr Phe Phe Leu Ile Leu Trp Val Val Phe Ser Phe
1 5 10 15
Phe Phe Met Phe Leu Asp Ala Gln Lys Phe Ile Ile Leu Met Lys Ser
20 25 30
Asn Ser Ser Phe Leu Leu Leu Leu His Met Leu Leu Glu Ser Tyr Leu
35 40 45
Arg Asn His Cys Gln Ile *
50 54

<210> 1180
<211> 81
<212> PRT
<213> Homo sapiens

<400> 1180
Met Ala Phe Leu Leu Ser Thr Leu Leu Asn His Tyr Leu Ala Cys Lys
1 5 10 15
His Ser Ser Glu Leu Trp Leu Gln Ser Ser Leu Asn Asn Leu Gly Lys
20 25 30
Lys Lys Asp Lys Ala Tyr Ile Phe Thr Val Leu Ala Leu Lys His Ile
35 40 45
Pro Gln Met Pro Leu Arg Ile Tyr Phe Val Leu Gly Gln Ser Trp Trp
50 55 60
Leu Met Pro Val Ile Pro Ala Ile Trp Glu Ala Glu Ala Arg Thr Ala
65 70 75 80
*

<210> 1181
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1181
Met Asp Glu Val His Val Leu Gly Leu Ala Leu Leu Thr Val Leu Ile
1 5 10 15
Glu Leu Val Ser Pro Leu Asp Ser Leu Arg Arg His Ser Cys Tyr Ile
20 25 30
Thr His Thr Phe Ser Cys Asn His Thr Asn Ser His Phe Tyr Ile Leu
35 40 45
Ser Ile Ser Cys Thr Asn Trp Gly Leu Lys Val Tyr Lys Ile Phe Leu
50 55 60
Ser Cys Glu Phe *
65 68

<210> 1182
<211> 430
<212> PRT
<213> Homo sapiens

<400> 1182
Met Ile Thr Lys Thr Pro Ala Gln Leu Arg Ser Val Ala Thr Ile Leu
1 5 10 15
Lys Thr Leu Cys Leu Ala Ser Pro Thr Val Ala Asn Val Lys Ala Pro
20 25 30
Pro Gln Val Ala Val Ala Ala Gly Thr Pro Asn Thr Ser Gly Ser Ile
35 40 45
His Glu Asn Pro Pro Lys Ala Lys Ala Thr Val Asn Val Lys Gln Ala
50 55 60

Ala Lys Val Val Lys Ala Ser Ser Pro Ser Tyr Leu Ala Glu Gly Lys
65 70 75 80
Ile Arg Cys Leu Ala Gln Pro His Pro Gly Thr Gly Val Pro Arg Ala
85 90 95
Ala Ala Glu Leu Pro Leu Glu Ala Glu Lys Ile Lys Thr Gly Thr Gln
100 105 110
Lys Gln Ala Lys Thr Asp Met Ala Phe Lys Thr Ser Val Ala Val Glu
115 120 125
Met Ala Gly Ala Pro Ser Trp Thr Lys Val Ala Glu Glu Gly Asp Lys
130 135 140
Pro Pro His Gly Pro Arg Cys Pro Asn His Ala Cys Gln Arg Leu Gly
145 150 155 160
Gly Leu Ser Ala Pro Pro Trp Ala Lys Pro Glu Asp Arg Gln Thr Gln
165 170 175
Pro Gln Pro His Gly His Val Pro Gly Lys Thr Thr Gln Gly Gly Pro
180 185 190
Cys Pro Ala Ala Cys Glu Val Gln Gly Met Leu Val Pro Pro Met Ala
195 200 205
Pro Thr Gly His Ser Thr Cys Asn Val Glu Ser Trp Gly Asp Asn Gly
210 215 220
Ala Thr Arg Ala Gln Pro Ser Met Pro Gly Gln Ala Val Pro Cys Gln
225 230 235 240
Glu Asp Thr Val Gly Ser Leu Leu Ala Ser Leu Cys Ala Glu Val Ala
245 250 255
Gly Val Leu Ala Ser Gln Glu Asp Leu Arg Thr Leu Leu Ala Lys Ala
260 265 270
Leu Ser Gln Gly Glu Val Trp Ala Ala Leu Asn Gln Ala Leu Ser Lys
275 280 285
Glu Val Leu Gly Ala Thr Val Thr Lys Ala Leu Pro Gln Ser Met Leu
290 295 300
Ser Met Ala Leu Val Lys Ala Leu Ser Trp Ser Glu Leu Arg Leu Thr
305 310 315 320
Leu Ser Arg Ala Leu Ser Arg Gly Glu Leu Arg Ala Glu Leu Thr Lys
325 330 335
Val Met Gln Gly Lys Leu Ala Glu Val Leu Ser Lys Ala Leu Thr Glu
340 345 350
Glu Glu Trp Val Ala Leu Ser Gln Ala Leu Cys Gln Gly Glu Leu Gly
355 360 365
Ala Leu Leu Ser Gln Ser Trp Cys Arg Val Ala Leu Arg Thr Gly Thr
370 375 380
Ile Leu Pro Lys Ala Ala Ser Lys Ser Thr Gly Ser Gly Val Thr Lys
385 390 395 400
Thr Pro Ala Leu Val Lys Val Ala Cys Arg Arg Ser Pro Ser Ala Ala
405 410 415
Trp Gly Pro Ser Leu Gly Pro Val Arg Pro Gln Thr Ser Lys
420 425 430

<210> 1183
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1183
Met Thr Phe Ile Leu Ser Arg Pro Pro Phe Phe Phe Leu Phe Ser Lys
1 5 10 15
Arg Ser Cys Ser Gly Ala Arg Trp Ser Arg Trp Pro Gln Phe Gly Tyr

```
                20                      25                      30
Ser Thr Ser Pro Pro Gly Ser Met Phe Phe Ser Ser Pro Pro Ser Arg
            35                      40                      45
Gly Ile Pro Ala  *
    50      52
```

<210> 1184
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1184
```
Met Ser Met Leu His Trp Ile His Phe Ile Leu His Val Ser Ile Val
 1               5                  10                  15
Leu Lys Phe Leu Ser Val Lys Cys Ser Ile Ile Tyr Lys Lys Ser Phe
                20                  25                  30
Ala Ser Ser Ala Phe Phe Leu Val Gln Ala Ser Phe Phe His Ile Met
            35                  40                  45
Leu Ser Gln Leu Tyr Phe Gln  *
    50                  55
```

<210> 1185
<211> 294
<212> PRT
<213> Homo sapiens

<400> 1185
```
Met Pro Tyr Val Thr Glu Ala Thr Arg Val Gln Leu Val Leu Pro Leu
 1               5                  10                  15
Leu Val Ala Glu Ala Ala Ala Ala Pro Ala Phe Leu Glu Ala Phe Ala
                20                  25                  30
Ala Asn Val Leu Glu Pro Arg Glu His Ala Leu Leu Thr Leu Leu Leu
            35                  40                  45
Val Tyr Gly Pro Arg Glu Gly Gly Arg Gly Ala Pro Asp Pro Phe Leu
    50                  55                  60
Gly Val Lys Ala Ala Ala Ala Glu Leu Glu Arg Arg Tyr Pro Gly Thr
65                  70                  75                  80
Arg Leu Ala Trp Leu Ala Val Arg Ala Glu Ala Pro Ser Gln Val Arg
                85                  90                  95
Leu Met Asp Val Val Ser Lys Lys His Pro Val Asp Thr Leu Phe Phe
                100                 105                 110
Leu Thr Thr Val Trp Thr Arg Pro Gly Pro Glu Val Leu Asn Arg Cys
            115                 120                 125
Arg Met Asn Ala Ile Ser Gly Trp Gln Ala Phe Phe Pro Val His Phe
    130                 135                 140
Gln Glu Phe Asn Pro Ala Leu Ser Pro Gln Arg Ser Pro Pro Gly Pro
145                 150                 155                 160
Pro Gly Ala Gly Pro Asp Pro Pro Ser Pro Pro Gly Ala Asp Pro Ser
                165                 170                 175
Arg Gly Ala Pro Ile Gly Gly Arg Phe Asp Arg Gln Ala Ser Ala Glu
                180                 185                 190
Gly Cys Phe Tyr Asn Ala Asp Tyr Leu Ala Ala Arg Ala Arg Leu Ala
            195                 200                 205
```

```
Gly Glu Leu Ala Gly Gln Glu Glu Glu Glu Ala Leu Glu Gly Leu Glu
    210                 215                 220
Val Met Asp Val Phe Leu Arg Phe Ser Gly Leu His Leu Phe Arg Ala
225                 230                 235                 240
Val Glu Pro Gly Leu Val Gln Lys Phe Ser Leu Arg Asp Cys Ser Pro
                245                 250                 255
Arg Leu Ser Glu Glu Leu Tyr His Arg Cys Arg Leu Ser Asn Leu Glu
            260                 265                 270
Gly Leu Gly Gly Arg Ala Gln Leu Ala Met Ala Leu Phe Glu Gln Glu
        275                 280                 285
Gln Ala Asn Ser Thr  *
    290         293
```

```
<210> 1186
<211> 57
<212> PRT
<213> Homo sapiens
```

```
<400> 1186
Met Met Tyr Ile Leu Leu Val Phe Leu Thr Leu Trp Leu Leu Ile Glu
  1               5                  10                  15
Met Ile His Cys Leu Gln Asn Gly Asp His Arg Arg Thr Arg Pro Pro
             20                  25                  30
Thr Glu Thr Gly Trp Leu Pro Leu Arg Phe His Leu Arg Thr Gly Lys
         35                  40                  45
Ile Leu Arg Tyr Leu Arg Gly Glu  *
     50                  55  56
```

```
<210> 1187
<211> 191
<212> PRT
<213> Homo sapiens
```

```
<400> 1187
Met Asp Leu Asp Asn Ala Lys Tyr Ser Leu Leu Gly Phe Ala Leu Phe
  1               5                  10                  15
Trp Val Val Val Gly Phe Phe Phe Val Cys Leu Phe Trp Phe Leu Val
             20                  25                  30
Phe Leu Pro Trp Cys Lys Thr Val Glu Ser Cys Leu Phe Thr Gly Leu
         35                  40                  45
Gly Ser Ile Glu Val Cys Val Ser Ser Val Arg Phe Leu Leu Arg Thr
     50                  55                  60
Ile Cys Ile Phe Asn Asn Ser Thr Ser Ser Arg Pro Ser Arg Arg Asn
 65                  70                  75                  80
Glu Arg Gly Leu Val Ser Ser Pro Glu Leu Ala Leu Glu Cys Val His
                 85                  90                  95
Leu Ala Ala His Gly Leu Val Ala Leu Arg Gly Leu Ile Gln Leu Pro
            100                 105                 110
Leu Gln Leu Pro Ala Val Gly Val Asp Ala Leu Gly Leu Leu Leu Cys
        115                 120                 125
Leu Leu Gln Leu Pro Leu Glu Leu Leu Asp Pro Gly Ile Ala Phe Leu
    130                 135                 140
Cys Leu Leu Leu Val Leu Leu Gly His Leu Ala Leu Val Leu His Leu
```

```
145                 150                 155                 160
Gln Gln Asp Phe Leu Gln Leu Leu Val Phe Leu Leu Gln Arg Leu Gly
                165                 170                 175
Gly Arg Leu Phe Leu Ser Gly Leu Leu Leu Asp Leu Leu Leu  *
            180                 185                 190
```

<210> 1188
<211> 216
<212> PRT
<213> Homo sapiens

<400> 1188

```
Met Ser Pro Pro Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu Pro Leu
 1               5                  10                  15
Leu Asn Val Glu Pro Ala Gly Ala Thr Leu Ile Arg Ile Pro Leu Arg
            20                  25                  30
Gln Val His Pro Gly Arg Arg Thr Leu Asn Leu Leu Arg Gly Trp Gly
        35                  40                  45
Lys Pro Ala Glu Leu Pro Lys Leu Gly Ala Pro Ser Pro Gly Asp Lys
    50                  55                  60
Pro Ala Ser Val Pro Leu Ser Lys Phe Leu Asp Ala Gln Tyr Phe Gly
65                  70                  75                  80
Glu Ile Gly Leu Gly Thr Pro Pro Gln Asn Phe Thr Val Ala Phe Asp
                85                  90                  95
Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Arg Arg Cys His Phe Phe
            100                 105                 110
Ser Val Pro Cys Trp Phe His His Arg Phe Asn Pro Asn Ala Ser Ser
        115                 120                 125
Ser Phe Lys Pro Ser Gly Thr Lys Phe Ala Ile Gln Tyr Gly Thr Gly
    130                 135                 140
Arg Val Asp Gly Ile Leu Ser Glu Asp Lys Leu Thr Ile Gly Gly Ile
145                 150                 155                 160
Lys Gly Ala Ser Val Ile Phe Gly Glu Ala Leu Trp Gly Ile Gln Pro
                165                 170                 175
Gly Ser Ser Leu Phe Pro Ala Pro Met Gly Tyr Trp Gly Leu Gly Phe
            180                 185                 190
Pro Ile Leu Val Leu Trp Glu Gly Ile Ser Ala Pro Ala Gly Cys Thr
        195                 200                 205
Gly Gly Ala Gly Ala Ile Gly  *
    210                 215
```

<210> 1189
<211> 176
<212> PRT
<213> Homo sapiens

<400> 1189

```
Met Ala Leu Arg Gly Ala Leu Gln Ser Gln Ser Gly Leu Leu Ser Leu
 1               5                  10                  15
Leu Leu Leu Gly Leu Gly Asp Lys Asp Pro Val Val Arg Cys Ser Ala
            20                  25                  30
Ser Phe Ala Val Gly Asn Ala Ala Tyr Gln Ala Gly Pro Leu Gly Pro
        35                  40                  45
```

```
Ala Leu Ala Ala Ala Val Pro Ser Met Thr Gln Leu Leu Gly Asp Pro
    50                  55                  60
Gln Ala Gly Ile Arg Arg Asn Val Ala Ser Ala Leu Gly Asn Leu Gly
65                  70                  75                  80
Pro Glu Gly Leu Gly Glu Glu Leu Leu Gln Cys Glu Val Pro Gln Arg
                85                  90                  95
Leu Leu Glu Met Ala Cys Gly Asp Pro Gln Pro Asn Val Lys Glu Ala
            100                 105                 110
Ala Leu Ile Ala Leu Arg Ser Leu Gln Gln Glu Pro Gly Ile His Gln
        115                 120                 125
Val Leu Val Ser Leu Gly Ala Ser Glu Lys Leu Ser Leu Leu Ser Leu
    130                 135                 140
Gly Asn Gln Ser Leu Pro His Ser Ser Pro Arg Pro Ala Ser Ala Lys
145                 150                 155                 160
His Cys Arg Lys Leu Ile His Leu Leu Arg Pro Ala His Ser Met  *
                165                 170                 175
```

<210> 1190
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1190

```
Met Ala Gly Thr Ala Gln Leu Leu Gly Leu Lys Gln Leu Ile Gly Leu
 1               5                  10                  15
Glu Leu Leu Thr Ala Gln Cys Gly Gln Ile Thr Gly Tyr Arg Asp Arg
            20                  25                  30
Arg Glu Glu Leu Leu Pro Pro Arg Phe Leu Ala Thr Gly Pro Pro Ser
        35                  40                  45
Cys His Pro Pro Ser Gln Thr Val Pro  *
    50                  55      57
```

<210> 1191
<211> 88
<212> PRT
<213> Homo sapiens

<400> 1191

```
Met Gly Ile Cys Leu Thr Trp Lys Pro Pro Thr Gly Val Ser Val Ile
 1               5                  10                  15
Leu Ile Leu Leu Ser Glu Leu His Met Lys Ser Pro Gly Arg Leu Lys
            20                  25                  30
Pro Lys Ser Ser Pro His Phe Ser Thr Val Leu Thr Pro Leu Thr Phe
        35                  40                  45
Met Tyr Pro Gly Leu Ala Leu Leu His Ser Leu Tyr Trp His Trp Gln
    50                  55                  60
Glu Asn Gly Glu Ile Leu Cys Arg Ala Ala Glu Pro Lys Phe Ala Gln
65                  70                  75                  80
Glu Ser Lys Cys Thr Ile Tyr  *
                85      87
```

<210> 1192
<211> 136
<212> PRT
<213> Homo sapiens

<400> 1192
Met Val Cys Leu Arg Leu Pro Gly Gly Ser Cys Met Ala Val Leu Thr
1 5 10 15
Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala Gly Asp Thr
20 25 30
Arg Pro Arg Phe Leu Glu Tyr Ser Thr Ser Glu Cys His Phe Phe Asn
35 40 45
Gly Thr Glu Arg Val Arg Tyr Leu Asp Arg Tyr Phe His Asn Gln Glu
50 55 60
Glu Asn Val Arg Phe Asp Ser Asp Val Gly Glu Phe Arg Ala Val Thr
65 70 75 80
Glu Leu Gly Arg Pro Asp Ala Glu Tyr Trp Asn Ser Gln Lys Asp Leu
85 90 95
Leu Gly Thr Ala Arg Arg Thr Ser Trp Ser Arg Ser Gly Ala Gly Trp
100 105 110
Thr Thr Thr Ala Asp Thr Thr Thr Gly Leu Trp Arg Ala Ser Gln Cys
115 120 125
Ser Gly Glu Ser Ile Leu Arg *
130 135

<210> 1193
<211> 99
<212> PRT
<213> Homo sapiens

<400> 1193
Met Leu Ala Ser Arg Gln Ala Cys Cys Pro Pro Val Ser Ser Leu Phe
1 5 10 15
Leu Pro Leu Ser Pro Thr Leu Ser Gly Phe Phe Thr Val Cys Ser Val
20 25 30
Ser His Leu His Val Pro Arg Gly Pro Ala Arg Leu Cys Pro Arg Met
35 40 45
Ser His Gly Ser Pro Ser Gly Leu Pro Ala Glu Pro Ser Glu His Gly
50 55 60
Cys Leu Leu Val Val Gly Leu Gln Gln Asn Cys Thr Arg Leu Thr Ser
65 70 75 80
Pro Ile Leu Ser Ser Arg Gly Leu Arg Val Gln Arg Arg Val Asn Leu
85 90 95
Ala Asp *
98

<210> 1194
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1194

Met Phe Ser Pro Ser Phe Gln Gly Ile Ile Thr Lys Val Arg Cys Val
1 5 10 15
Cys Val Ser Leu Ser Leu Cys Val Cys Val Cys Val Cys Val Cys Val
20 25 30
Cys Val Tyr Lys Glu Pro Gly Met Arg Ala Gly Arg Gly Gly Ser Arg
35 40 45
Leu *
49

<210> 1195
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1195
Met Gln Gly Val Arg Val Ser Phe Gly Trp Ala Met Gly Leu Ala Trp
1 5 10 15
Gly Ser Cys Ala Leu Glu Ala Phe Ser Gly Thr Leu Leu Leu Ser Ala
20 25 30
Ala Trp Thr Leu Ser Leu Ser Pro Pro Ile Cys Gly His Leu Ser Pro
35 40 45
Gln Gln Val Gly Gly Arg Gly Gly Asp *
50 55 57

<210> 1196
<211> 132
<212> PRT
<213> Homo sapiens

<400> 1196
Met Leu Pro Asn Ser Ser Ser Leu Trp Leu Val Met Arg Ile Leu Ile
1 5 10 15
Phe Cys Val Ile Pro Ala Gly Gly Val Leu Gly Ala Pro Thr Ala Ala
20 25 30
Gly Leu Arg Pro Thr Gly Asp Val Ala Leu Arg Arg Pro Ala Gly Ser
35 40 45
Val Glu Pro Ser Gly Ser Arg Gly Leu Arg Ala Ser Val Cys Gln Arg
50 55 60
Leu Ser Met Phe Leu Ala His Phe Leu Arg Gly His Phe Leu Trp Trp
65 70 75 80
Ile Leu Asp Gly Gln Arg Leu Gly Phe Pro Leu Ser Leu Ala Thr Trp
85 90 95
Asn Arg Arg Lys Lys Ser Leu Gln His Leu Leu His Lys His Val Leu
100 105 110
Pro Val Arg Arg His Ala Gly Pro Cys Arg Gly Pro Gln Thr Thr Ala
115 120 125
Arg Gly Pro Arg
130 132

<210> 1197
<211> 64

<212> PRT
<213> Homo sapiens

<400> 1197
Met Pro Tyr Leu Ile Leu Phe Phe Ala Val Tyr Ile Leu Tyr Lys Ile
1 5 10 15
Leu Val Lys Val His Leu Phe Ile Ala Glu Ile Ala Leu Tyr Asp Phe
20 25 30
Leu Lys Phe Phe Glu Leu Tyr Gly Ile Cys Met Phe Lys Thr Leu Thr
35 40 45
Cys Leu Val Val Thr Thr Leu Ile Phe Ile Asn Leu Leu Ser Leu *
50 55 60 63

<210> 1198
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1198
Met Leu Gly Pro Pro Glu Ala Arg Leu Ser Leu Cys Ile Leu Leu Trp
1 5 10 15
Ile Ser Ile Leu Cys Pro Trp Tyr Arg Phe Thr Leu Tyr Cys Ser Ser
20 25 30
Trp Pro Tyr Pro Ile Phe Asp Ser Gly Tyr Arg Pro Leu Phe Gly Thr
35 40 45
Thr Leu Leu Phe *
50 52

<210> 1199
<211> 50
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(50)
<223> Xaa = any amino acid or nothing

<400> 1199
Met Leu Arg Leu Gly Leu Cys Ala Ala Ala Leu Leu Cys Val Cys Arg
1 5 10 15
Pro Gly Ala Val Arg Ala Asp Cys Trp Leu Ile Glu Gly Asp Lys Gly
20 25 30
Tyr Val Trp Leu Ala Ile Cys Asn Gln Asn Gln Pro Ala Tyr Glu Thr
35 40 45
Xaa Pro
50

<210> 1200
<211> 49
<212> PRT

<213> Homo sapiens

<400> 1200

```
Met Gly Trp Ser Cys Leu Ala Ile Leu Ser Ser Ala Ile Gly His Leu
  1               5                  10                  15
Ile Cys Leu Trp Pro Phe Ala Met Val Val Ala Leu Phe Pro Tyr Leu
             20                  25                  30
Gly Tyr Phe Ser Gly Ser Leu Ser Thr Gln Ile Gly Ser Asp Leu Pro
         35                  40                  45          48
 *
```

<210> 1201
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1201

```
Met Trp Ala Gly Tyr Val Ile Tyr Thr Leu Phe Cys Arg Phe Ser Phe
  1               5                  10                  15
Ser Leu Ile Ser Ile Arg Ile Arg Lys Leu Gly Ser Ile Gly Phe Glu
             20                  25                  30
Leu Pro Leu Gly Asn Asn Ser Gln Leu Gly Cys Pro Leu  *
         35                  40                  45
```

<210> 1202
<211> 332
<212> PRT
<213> Homo sapiens

<400> 1202

```
Met Pro Leu Pro Trp Ser Leu Ala Leu Pro Leu Leu Leu Ser Trp Val
  1               5                  10                  15
Ala Gly Gly Phe Gly Asn Ala Ala Ser Ala Arg His His Gly Leu Leu
             20                  25                  30
Ala Ser Ala Arg Gln Pro Gly Val Cys His Tyr Gly Thr Lys Leu Ala
         35                  40                  45
Cys Cys Tyr Gly Trp Arg Arg Asn Ser Lys Gly Val Cys Glu Ala Thr
     50                  55                  60
Cys Glu Pro Gly Cys Lys Phe Gly Glu Cys Val Gly Pro Asn Lys Cys
 65                  70                  75                  80
Arg Cys Phe Pro Gly Tyr Thr Gly Lys Thr Cys Ser Gln Asp Val Asn
                 85                  90                  95
Glu Cys Gly Met Lys Pro Arg Pro Cys Gln His Arg Cys Val Asn Thr
            100                 105                 110
His Gly Ser Tyr Lys Cys Phe Cys Leu Ser Gly His Met Leu Met Pro
        115                 120                 125
Asp Ala Thr Cys Val Asn Ser Arg Thr Cys Ala Met Ile Asn Cys Gln
    130                 135                 140
Tyr Ser Cys Glu Asp Thr Glu Glu Gly Pro Gln Cys Leu Cys Pro Ser
145                 150                 155                 160
Ser Gly Leu Arg Leu Ala Pro Asn Gly Arg Asp Cys Leu Asp Ile Asp
```

```
                    165                     170                     175
Glu Cys Ala Ser Gly Lys Val Ile Cys Pro Tyr Asn Arg Arg Cys Val
                180                     185                     190
Asn Thr Phe Gly Ser Tyr Tyr Cys Lys Cys His Ile Gly Phe Glu Leu
            195                     200                     205
Gln Tyr Ile Ser Gly Arg Tyr Asp Cys Ile Asp Ile Asn Glu Cys Thr
    210                     215                     220
Met Asp Ser His Thr Cys Ser His His Ala Asn Cys Phe Asn Thr Gln
225                     230                     235                     240
Gly Ser Phe Lys Cys Lys Cys Lys Gln Gly Tyr Lys Gly Asn Gly Leu
                    245                     250                     255
Arg Cys Ser Ala Ile Pro Glu Asn Ser Val Lys Glu Val Leu Arg Ala
                260                     265                     270
Pro Gly Thr Ile Lys Asp Arg Ile Lys Lys Leu Leu Ala His Lys Asn
            275                     280                     285
Ser Met Lys Lys Lys Ala Lys Ile Lys Asn Val Thr Pro Glu Pro Thr
    290                     295                     300
Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro Phe Asn Tyr Glu Glu
305                     310                     315                     320
Ile Val Ser Arg Gly Gly Asn Ser His Gly Gly  *
                    325                     330 331
```

<210> 1203
<211> 825
<212> PRT
<213> Homo sapiens

<400> 1203

```
Met Ala Arg Leu Gly Asn Cys Ser Leu Thr Trp Ala Ala Leu Ile Ile
 1               5                  10                  15
Leu Leu Leu Pro Gly Ser Leu Glu Glu Cys Gly His Ile Ser Val Ser
                20                  25                  30
Ala Pro Ile Val His Leu Gly Asp Pro Ile Thr Ala Ser Cys Ile Ile
            35                  40                  45
Lys Gln Asn Cys Ser His Leu Asp Pro Glu Pro Gln Ile Leu Trp Arg
    50                  55                  60
Leu Gly Ala Glu Leu Gln Pro Gly Gly Arg Gln Gln Arg Leu Ser Asp
65                  70                  75                  80
Gly Thr Gln Glu Ser Ile Ile Thr Leu Pro His Leu Asn His Thr Gln
                85                  90                  95
Ala Phe Leu Ser Cys Cys Leu Asn Trp Gly Asn Ser Leu Gln Ile Leu
            100                 105                 110
Asp Gln Val Glu Leu Arg Ala Gly Tyr Pro Pro Ala Ile Pro His Asn
        115                 120                 125
Leu Ser Cys Leu Met Asn Leu Thr Thr Ser Ser Leu Ile Cys Gln Trp
    130                 135                 140
Glu Pro Gly Pro Glu Thr His Leu Pro Thr Ser Phe Thr Leu Lys Ser
145                 150                 155                 160
Phe Lys Ser Arg Gly Asn Cys Gln Thr Gln Gly Asp Ser Ile Leu Asp
                165                 170                 175
Cys Val Pro Lys Asp Gly Gln Ser His Cys Cys Ile Pro Arg Lys His
            180                 185                 190
Leu Leu Leu Tyr Gln Asn Met Gly Ile Trp Val Gln Ala Glu Asn Ala
        195                 200                 205
Leu Gly Thr Ser Met Ser Pro Gln Leu Cys Leu Asp Pro Met Asp Val
    210                 215                 220
```

```
Val Lys Leu Glu Pro Pro Met Leu Arg Thr Met Asp Pro Ser Pro Glu
225                 230                 235                 240
Ala Ala Pro Pro Gln Ala Gly Cys Leu Gln Leu Cys Trp Glu Pro Trp
                245                 250                 255
Gln Pro Gly Leu His Ile Asn Gln Lys Cys Glu Leu Arg His Lys Pro
            260                 265                 270
Gln Arg Gly Glu Ala Ser Trp Ala Leu Val Gly Pro Leu Pro Leu Glu
        275                 280                 285
Ala Leu Gln Tyr Glu Leu Cys Gly Leu Leu Pro Ala Thr Ala Tyr Thr
    290                 295                 300
Leu Gln Ile Arg Cys Ile Arg Trp Pro Leu Pro Gly His Trp Ser Asp
305                 310                 315                 320
Trp Ser Pro Ser Leu Glu Leu Arg Thr Thr Glu Arg Ala Pro Thr Val
                325                 330                 335
Arg Leu Asp Thr Trp Trp Arg Gln Arg Gln Leu Asp Pro Arg Thr Val
            340                 345                 350
Gln Leu Phe Trp Lys Pro Val Pro Leu Glu Glu Asp Ser Gly Arg Ile
        355                 360                 365
Gln Gly Tyr Val Val Ser Trp Arg Pro Ser Gly Gln Ala Gly Ala Ile
    370                 375                 380
Leu Pro Leu Cys Asn Thr Thr Glu Leu Ser Cys Thr Phe His Leu Pro
385                 390                 395                 400
Ser Glu Ala Gln Glu Val Ala Leu Val Ala Tyr Asn Ser Ala Gly Thr
                405                 410                 415
Ser Arg Pro Thr Pro Val Val Phe Ser Glu Ser Arg Gly Pro Ala Leu
            420                 425                 430
Thr Arg Leu His Ala Met Ala Arg Asp Pro His Ser Leu Trp Val Gly
        435                 440                 445
Trp Glu Pro Pro Asn Pro Trp Pro Gln Gly Tyr Val Ile Glu Trp Gly
    450                 455                 460
Leu Gly Pro Pro Ser Ala Ser Asn Ser Asn Lys Thr Trp Arg Met Glu
465                 470                 475                 480
Gln Asn Gly Arg Ala Thr Gly Phe Leu Leu Lys Glu Asn Ile Arg Pro
                485                 490                 495
Phe Gln Leu Tyr Glu Ile Ile Val Thr Pro Leu Tyr Gln Asp Thr Met
            500                 505                 510
Gly Pro Ser Gln His Val Tyr Ala Tyr Ser Gln Glu Met Ala Pro Ser
        515                 520                 525
His Ala Pro Glu Leu His Leu Lys His Ile Gly Lys Thr Trp Ala Gln
    530                 535                 540
Leu Glu Trp Val Pro Glu Pro Pro Glu Leu Gly Lys Ser Pro Leu Thr
545                 550                 555                 560
His Tyr Thr Ile Phe Trp Thr Asn Ala Gln Asn Gln Ser Phe Ser Ala
                565                 570                 575
Ile Leu Asn Ala Ser Ser Arg Gly Phe Val Leu His Gly Leu Glu Pro
            580                 585                 590
Ala Ser Leu Tyr His Ile His Leu Met Ala Ala Ser Gln Ala Gly Ala
        595                 600                 605
Thr Asn Ser Thr Val Leu Thr Leu Met Thr Leu Thr Pro Ala Pro Thr
    610                 615                 620
Gly Arg Ile Pro Ser Gly Gln Val Ser Gln Thr Gln Leu Thr Ala Ala
625                 630                 635                 640
Trp Ala Pro Gly Cys Pro Gln Ser Trp Arg Arg Met Pro Ser Ser Cys
                645                 650                 655
Pro Ala Leu Ala Arg His Pro Ser Pro Ser Ser Gln Cys Trp Arg Arg
            660                 665                 670
Met Lys Arg Ser Arg Cys Pro Gly Ser Pro Ile Thr Ala Gln Arg Pro
        675                 680                 685
Val Ala Ser Pro Leu Trp Ser Arg Pro Met Cys Ser Arg Gly Thr Gln
```

```
    690                 695                 700
Glu Gln Phe Pro Pro Ser Pro Asn Pro Ser Leu Ala Pro Ala Ile Arg
705                 710                 715                 720
Ser Phe Met Gly Ser Cys Trp Ala Ala Pro Gln Ala Gln Gly Gln Gly
                725                 730                 735
Thr Ile Ser Ala Val Thr Pro Leu Ser Pro Ser Trp Arg Ala Ser Pro
            740                 745                 750
Pro Ala Pro Ser Pro Met Arg Thr Ser Gly Ser Arg Pro Ala Pro Trp
        755                 760                 765
Gly Pro Leu Val Thr Pro Ser Pro Lys Ser Gln Glu Asp Asp Cys Val
    770                 775                 780
Phe Gly Pro Leu Leu Asn Phe Pro Pro Ser Cys Arg Gly Ser Gly Ser
785                 790                 795                 800
Met Gly Trp Arg Arg Trp Gly Ala Ser Arg Ala Ser Leu Gly Phe Pro
                805                 810                 815
Ser Trp Ala Cys Leu Leu Lys Ala  *
            820             824


     <210> 1204
     <211> 48
     <212> PRT
     <213> Homo sapiens


     <400> 1204
Met Leu Leu Phe Ser Ser Arg Phe Ile Met Phe Leu Trp Pro Pro Val
 1               5                  10                  15
Ser Gly Val Cys Leu Ser Phe Ile Arg Asp Arg Ser Phe Leu Pro Met
            20                  25                  30
Cys His Phe Ile Tyr Val Leu Ile Leu Cys Asn Ser Ile Ala Leu  *
        35                  40                  45      47


     <210> 1205
     <211> 46
     <212> PRT
     <213> Homo sapiens


     <400> 1205
Met Gly Ser Phe Ser Phe Ile Leu Val Leu Phe Ile Asp Cys Leu Cys
 1               5                  10                  15
Met Phe Pro Ser Val Leu Val Gln Leu Leu Cys Thr Tyr Ser Ser Leu
            20                  25                  30
Met Lys Thr Pro Leu Trp Leu Gln Ala Arg Ser Ser His  *
        35                  40                  45


     <210> 1206
     <211> 88
     <212> PRT
     <213> Homo sapiens


     <400> 1206
```

```
Met Gln Trp Cys Asn Leu Thr Ala Thr Ser Ala Phe Gln Ile Glu Ala
 1               5                  10                  15
Ile Leu Leu Pro Gln Leu Ser Pro Val Ala Gly Ile Thr Gly Thr Cys
            20                  25                  30
Tyr His Ala Trp Leu Ile Phe Val Phe Leu Val Glu Thr Gly Phe His
        35                  40                  45
His Val Gly Gln Ala Gly Leu Glu Leu Leu Thr Ser Gly Asp Pro Pro
    50                  55                  60
Thr Leu Ala Ser Gln Ser Ala Gly Ile Thr Ser Val Ser His His Ala
65                  70                  75                  80
Gln Pro Leu Lys Gly Thr Phe  *
                85      87
```

```
<210> 1207
<211> 186
<212> PRT
<213> Homo sapiens
```

```
<400> 1207
Met Ile Leu Asn Lys Ala Leu Met Leu Gly Ala Leu Ala Leu Thr Thr
 1               5                  10                  15
Val Met Ser Pro Cys Gly Gly Glu Asp Ile Val Ala Asp His Val Ala
            20                  25                  30
Ser Tyr Gly Val Asn Leu Tyr Gln Ser Tyr Gly Pro Ser Gly Gln Tyr
        35                  40                  45
Ser His Glu Phe Asp Gly Asp Glu Glu Phe Tyr Val Asp Leu Glu Arg
    50                  55                  60
Lys Glu Thr Val Trp Gln Leu Pro Leu Phe Arg Arg Phe Arg Arg Phe
65                  70                  75                  80
Asp Pro Gln Phe Ala Leu Thr Asn Ile Ala Val Leu Lys His Asn Leu
                85                  90                  95
Asn Ile Val Ile Lys Arg Ser Asn Ser Thr Ala Ala Thr Asn Glu Val
            100                 105                 110
Pro Glu Val Thr Val Phe Ser Lys Ser Pro Val Thr Leu Gly Gln Pro
        115                 120                 125
Asn Thr Leu Ile Cys Leu Val Asp Asn Ile Phe Pro Pro Val Val Asn
    130                 135                 140
Ile Thr Trp Leu Ser Asn Gly His Ser Val Thr Glu Gly Val Ser Glu
145                 150                 155                 160
Thr Arg Pro Ser Ser Pro Lys Ser Asp His Phe Leu Leu Gln Asp Gln
                165                 170                 175
Val Thr Ser Pro Ser Phe Pro Phe Glu  *
            180                 185
```

```
<210> 1208
<211> 46
<212> PRT
<213> Homo sapiens
```

```
<400> 1208
Met Asn Pro His Leu Gly Val Phe Leu Val Leu Val Ser Phe Phe Leu
 1               5                  10                  15
Ser Leu Leu Asp Ser Gln Leu His Ser Trp Ile Val Leu His Asn Ser
```

```
                20                      25                      30
Pro Ser Ser Arg Met Trp Lys Ser Ile Ile Phe Phe Leu  *
            35                      40                      45
```

<210> 1209
<211> 199
<212> PRT
<213> Homo sapiens

<400> 1209

```
Met Ala Leu Leu Val Pro Leu Ala Leu Leu Val Ile Gln Ala His Leu
 1               5                  10                  15
Val Leu Ser Val Gln Leu Glu Arg Val Val Thr Glu Glu Lys Val Ala
            20                  25                  30
Leu Leu Ala Leu Leu Val Leu Pro Val Leu Leu Val Pro Glu Val Leu
        35                  40                  45
Leu Val Leu Lys Ala His Val Val Thr Lys Val Lys Gln Val Asn Val
    50                  55                  60
Glu Leu Leu Ala Ser Lys Asp Ile Glu Asp Ser Leu Val Ile Gln Val
65                  70                  75                  80
Pro Gln Val Leu Gln Ala Leu Leu Val Ser Arg Val Gln Ser Ala Val
                85                  90                  95
Gln Asp Leu Gln Ala Pro Glu Asp Leu Leu Asp Pro Val Asp Leu Leu
            100                 105                 110
Ala Lys Met Glu Pro Val Asp Ile Gln Val Pro Leu Asp His Gln Gly
        115                 120                 125
Leu Glu Val Thr Glu Val Lys Glu Asp Leu Arg Ala Pro Gln Ala Thr
    130                 135                 140
Gln Gly Asn Gln Ala Leu Leu Asp Leu Leu Val Pro Leu Val Leu Ala
145                 150                 155                 160
Val Val Val Leu Glu Pro Leu Pro Leu Leu Gly Leu Glu Val Lys Lys
                165                 170                 175
Leu Ala Val Leu Pro Arg Ile Met Glu Met Asn Gln Trp Ile Ser Lys
            180                 185                 190
Ser Thr Pro Met Arg Leu  *
        195         198
```

<210> 1210
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1210

```
Met Leu Val Thr Arg Pro Ser Gly Asn Thr Trp Ile Pro Phe Phe Cys
 1               5                  10                  15
Trp Leu Leu Phe Cys Val Val Glu Leu Leu Ser Pro Gly Asn Leu Gly
            20                  25                  30
Pro Ser Val Leu Glu Val Val Leu Pro Asp Val Phe Lys Leu Asp Leu
        35                  40                  45
Leu Ser Ser Leu Leu Asp Val Gly Ser Leu  *
    50                  55          58
```

<210> 1211
<211> 227
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(227)
<223> Xaa = any amino acid or nothing

<400> 1211
Met Ala Ser Ile Cys Ser Trp Arg Val Met Leu Ala Trp Ala Ala Cys
1 5 10 15
Trp Val Arg Ala His Ala Ala Leu Ser Gly His Pro Arg Ser Thr Phe
20 25 30
Ser Leu Trp Leu Ser Gly Ile Ser Leu Pro Xaa Pro Ile Phe Leu Pro
35 40 . 45
Met Ala Val Ser Leu Leu Thr Pro Lys Asp Val Lys Tyr Ala Arg Ser
50 55 60
Pro Asn Cys Phe Lys Ala Ala Leu Asn Ile Pro Asp Pro Gly Ala Val
65 70 75 80
His Leu Ile Ile Ala Leu Leu Leu Thr Asp Gly Ala Ile Pro Leu Leu
85 90 95
Gln Pro Ala Arg Val Lys Lys Ser Asn Ala His Val Phe Leu His Phe
100 105 110
Ala Gly Gly Asp Leu Leu Pro Ser Asn Gly Gly His Lys Ile Leu Ile
115 120 125
Trp Ser Arg Gly Trp Arg Gln Gly Leu Gly Gly Phe Gly Ile Ile Ile
130 135 140
Leu Ala Asp Asn Asp Leu Val Trp Ser Trp Gly Gln Ser Trp Arg His
145 150 155 160
Gly Cys Leu Leu Gly Val Gly Ala Leu Ser Ala Leu Leu Leu His His
165 170 175
Leu Asn Pro His Pro Tyr Leu Val Leu Gly Cys Pro Gly Pro Ala Gly
180 185 190
Lys Glu Ala Pro Pro Pro Ser Pro Val Cys His Pro Pro His Gln Thr
195 200 205
Arg Pro Pro Ser Gln Leu Pro His Ser Pro Gln Thr Phe His Ser Ala
210 215 220
Pro Glu *
225 226

<210> 1212
<211> 62
<212> PRT
<213> Homo sapiens

<400> 1212
Met Cys Val Ser Val Arg Val Cys Val Cys Val Cys Val Cys Ala Arg
1 5 10 15
Val Cys Ala Arg Leu Cys Val Cys Val His Ala Arg Leu Cys Val His
20 25 30
Val Arg Val Ser Ala Arg Val Ser Val Tyr Val Cys Thr Arg Val Ser
35 40 45
Val Cys Val His Ala Arg Ala Arg His His Arg Ser Ile *

50 55 60 61

<210> 1213
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1213
Met Phe Arg Arg Leu Thr Phe Ala Gln Leu Leu Phe Ala Thr Val Leu
1 5 10 15
Gly Ile Ala Gly Gly Val Tyr Ile Phe Gln Pro Val Phe Glu Gln Tyr
20 25 30
Ala Lys Asp Gln Lys Glu Leu Lys Glu Lys Met Gln Leu Val Gln Glu
35 40 45
Ser Glu Glu Lys Lys Ser *
50 54

<210> 1214
<211> 642
<212> PRT
<213> Homo sapiens

<400> 1214
Met Thr Met Tyr Leu Trp Leu Lys Leu Leu Ala Phe Gly Phe Ala Phe
1 5 10 15
Leu Asp Thr Glu Val Phe Val Thr Gly Gln Ser Pro Thr Pro Ser Pro
20 25 30
Thr Asp Ala Tyr Leu Asn Ala Ser Glu Thr Thr Thr Leu Ser Pro Ser
35 40 45
Gly Ser Ala Val Ile Ser Thr Thr Thr Ile Ala Thr Thr Pro Ser Lys
50 55 60
Pro Thr Cys Asp Glu Lys Tyr Ala Asn Ile Thr Val Asp Tyr Leu Tyr
65 70 75 80
Asn Lys Glu Thr Lys Leu Phe Thr Ala Lys Leu Asn Val Asn Glu Asn
85 90 95
Val Glu Cys Gly Asn Asn Thr Cys Thr Asn Asn Glu Val His Asn Leu
100 105 110
Thr Glu Cys Lys Asn Ala Ser Val Ser Ile Ser His Asn Ser Cys Thr
115 120 125
Ala Pro Asp Lys Thr Leu Ile Leu Asp Val Pro Pro Gly Val Glu Lys
130 135 140
Phe Gln Leu His Asp Cys Thr Gln Val Glu Lys Ala Asp Thr Thr Ile
145 150 155 160
Cys Leu Lys Trp Lys Asn Ile Glu Thr Phe Thr Cys Asp Thr Gln Asn
165 170 175
Ile Thr Tyr Arg Phe Gln Cys Gly Asn Met Ile Phe Asp Asn Lys Glu
180 185 190
Ile Lys Leu Glu Asn Leu Glu Pro Glu His Glu Tyr Lys Cys Asp Ser
195 200 205
Glu Ile Leu Tyr Asn Asn His Lys Phe Thr Asn Ala Ser Lys Ile Ile
210 215 220
Lys Thr Asp Phe Gly Ser Pro Gly Glu Pro Gln Ile Ile Phe Cys Arg
225 230 235 240

```
Ser Glu Ala Ala His Gln Gly Val Ile Thr Trp Asn Pro Pro Gln Arg
                245                 250                 255
Ser Phe His Asn Phe Thr Leu Cys Tyr Ile Lys Glu Thr Glu Lys Asp
            260                 265                 270
Cys Leu Asn Leu Asp Lys Asn Leu Ile Lys Tyr Asp Leu Gln Asn Leu
        275                 280                 285
Lys Pro Tyr Thr Lys Tyr Val Leu Ser Leu His Ala Tyr Ile Ile Ala
    290                 295                 300
Lys Val Gln Arg Asn Gly Ser Ala Ala Met Cys His Phe Thr Thr Lys
305                 310                 315                 320
Ser Ala Pro Pro Ser Gln Val Trp Asn Met Thr Val Ser Met Thr Ser
                325                 330                 335
Asp Asn Ser Met His Val Lys Cys Arg Pro Pro Arg Asp Arg Asn Gly
            340                 345                 350
Pro His Glu Arg Tyr His Leu Glu Val Glu Ala Gly Asn Thr Leu Val
        355                 360                 365
Arg Asn Glu Ser His Lys Asn Cys Asp Phe Arg Val Lys Asp Leu Gln
    370                 375                 380
Tyr Ser Thr Asp Tyr Thr Phe Lys Ala Tyr Phe His Asn Gly Asp Tyr
385                 390                 395                 400
Pro Gly Glu Pro Phe Ile Leu His His Ser Thr Ser Tyr Asn Ser Lys
                405                 410                 415
Ala Leu Ile Ala Phe Leu Ala Phe Leu Ile Ile Val Thr Ser Ile Ala
            420                 425                 430
Leu Leu Val Val Leu Tyr Lys Ile Tyr Asp Leu His Lys Lys Arg Ser
        435                 440                 445
Cys Asn Leu Asp Glu Gln Gln Glu Leu Val Glu Arg Asp Asp Glu Lys
    450                 455                 460
Gln Leu Met Asn Val Glu Pro Ile His Ala Asp Ile Leu Leu Glu Thr
465                 470                 475                 480
Tyr Lys Arg Lys Ile Ala Asp Glu Gly Arg Leu Phe Leu Ala Glu Phe
                485                 490                 495
Gln Ser Ile Pro Arg Val Phe Ser Lys Phe Pro Ile Lys Glu Ala Arg
            500                 505                 510
Lys Pro Phe Asn Gln Asn Lys Asn Arg Tyr Val Asp Ile Leu Pro Tyr
        515                 520                 525
Asp Tyr Asn Arg Val Glu Leu Ser Glu Ile Asn Gly Asp Ala Gly Ser
    530                 535                 540
Asn Tyr Ile Asn Ala Ser Tyr Ile Asp Gly Phe Lys Glu Pro Arg Lys
545                 550                 555                 560
Tyr Ile Ala Ala Gln Gly Pro Arg Asp Glu Thr Val Asp Asp Phe Trp
                565                 570                 575
Arg Met Ile Trp Glu Gln Lys Ala Thr Val Ile Val Met Val Thr Arg
            580                 585                 590
Cys Glu Glu Gly Asn Arg Asn Lys Cys Ala Glu Tyr Trp Pro Ser Met
        595                 600                 605
Glu Glu Gly Thr Arg Ala Phe Gly Glu Cys Cys Cys Lys Asp Leu Thr
    610                 615                 620
Lys His Lys Arg Cys Pro Arg Leu His His Ser Glu Ile Glu His Cys
625                 630                 635                 640
Lys  *
641
```

<210> 1215
<211> 85
<212> PRT
<213> Homo sapiens

<400> 1215

```
Met Leu Phe Leu Thr Leu Ile Ser Phe Cys Gly Phe Leu Leu Leu His
 1               5                  10                  15
Arg Leu Thr Ser Met Val Arg Leu Phe Leu Gly Ala Ala Ile Gln Lys
            20                  25                  30
Ile Leu Ser Lys Arg Leu Glu Phe Ser Leu Leu Pro Leu Val Ser Phe
        35                  40                  45
Ala Gly Ser Val Asn Met Ala Gly Pro Cys Thr Ala Asn Ala Gly Pro
    50                  55                  60
His Gly Gly Leu Gly Lys Pro Gly Arg Leu Cys Gly Ser Phe Arg Ser
65                  70                  75                  80
Ser Arg Ser Gln  *
            84
```

<210> 1216
<211> 403
<212> PRT
<213> Homo sapiens

<400> 1216

```
Met Ala Ser Val Val Leu Pro Ser Gly Ser Gln Cys Ala Ala Ala Ala
 1               5                  10                  15
Ala Ala Ala Ala Pro Pro Gly Leu Arg Leu Arg Leu Leu Leu Leu Leu
            20                  25                  30
Phe Ser Ala Ala Ala Leu Ile Pro Thr Gly Asp Gly Gln Asn Leu Phe
        35                  40                  45
Thr Lys Asp Val Thr Val Ile Glu Gly Glu Val Ala Thr Ile Ser Cys
    50                  55                  60
Gln Val Asn Lys Ser Asp Asp Ser Val Ile Gln Leu Leu Asn Pro Asn
65                  70                  75                  80
Arg Gln Thr Ile Tyr Phe Arg Asp Phe Arg Pro Leu Lys Asp Ser Arg
                85                  90                  95
Phe Gln Leu Leu Asn Phe Ser Ser Ser Glu Leu Lys Val Ser Leu Thr
            100                 105                 110
Asn Val Ser Ile Ser Asp Glu Gly Arg Tyr Phe Cys Gln Leu Tyr Thr
        115                 120                 125
Asp Pro Pro Gln Glu Ser Tyr Thr Thr Ile Thr Val Leu Val Pro Pro
    130                 135                 140
Arg Asn Leu Met Ile Asp Ile Gln Lys Asp Thr Ala Val Glu Gly Glu
145                 150                 155                 160
Glu Ile Glu Val Asn Cys Thr Ala Met Ala Ser Lys Pro Ala Thr Thr
                165                 170                 175
Ile Arg Trp Phe Lys Gly Asn Thr Glu Leu Lys Gly Lys Ser Glu Val
            180                 185                 190
Glu Glu Trp Ser Asp Met Tyr Thr Val Thr Ser Gln Leu Met Leu Lys
        195                 200                 205
Val His Lys Glu Asp Asp Gly Val Pro Val Ile Cys Gln Val Glu His
    210                 215                 220
Pro Ala Val Thr Gly Asn Leu Gln Thr Gln Arg Tyr Leu Glu Val Gln
225                 230                 235                 240
Tyr Lys Pro Gln Val His Ile Gln Met Thr Tyr Pro Leu Gln Gly Leu
                245                 250                 255
Thr Arg Glu Gly Asp Ala Leu Glu Leu Thr Cys Glu Ala Ile Gly Lys
            260                 265                 270
```

Pro Gln Pro Val Met Val Thr Trp Val Arg Val Asp Asp Glu Met Pro
275 280 285
Gln His Ala Val Leu Ser Gly Pro Asn Leu Phe Ile Asn Asn Leu Asn
290 295 300
Lys Thr Asp Asn Gly Thr Tyr Arg Cys Glu Ala Ser Asn Ile Val Gly
305 310 315 320
Lys Ala His Ser Asp Tyr Met Leu Tyr Val Tyr Asp Pro Pro Thr Thr
325 330 335
Ile Pro Pro Pro Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr
340 345 350
Thr Ile Leu Thr Ile Ile Thr Asp Ser Arg Ala Gly Glu Glu Gly Ser
355 360 365
Ile Arg Ala Val Asp His Ala Val Ile Gly Gly Val Val Ala Val Val
370 375 380
Val Phe Ala Met Leu Cys Leu Leu Ile Ile Leu Gly Arg Tyr Phe Ala
385 390 395 400
Gln Thr *
402

<210> 1217
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1217
Met Arg Ala Trp Ala Trp Pro Phe Cys Thr Ser Val Thr Ser Leu Ser
1 5 10 15
Ala Met Ala Ser Pro Trp Arg Arg Trp Pro Arg Arg Pro Ala Ser Arg
20 25 30
Thr Ala Ser Arg Ala Pro Ser Ala Gly Ile Ser Gly Ser Thr Ala Pro
35 40 45 48
*

<210> 1218
<211> 304
<212> PRT
<213> Homo sapiens

<400> 1218
Met Ala Arg Arg Ser Arg His Arg Leu Leu Leu Leu Leu Leu Arg Tyr
1 5 10 15
Leu Val Val Ala Leu Gly Tyr His Lys Ala Tyr Gly Phe Ser Ala Pro
20 25 30
Lys Asp Gln Gln Val Val Thr Ala Val Glu Tyr Gln Glu Ala Ile Leu
35 40 45
Ala Cys Lys Thr Pro Lys Lys Thr Val Ser Ser Arg Leu Glu Trp Lys
50 55 60
Lys Leu Gly Arg Ser Val Ser Phe Val Tyr Tyr Gln Gln Thr Leu Gln
65 70 75 80
Gly Asp Phe Lys Asn Arg Ala Glu Met Ile Asp Phe Asn Ile Arg Ile
85 90 95
Lys Asn Val Thr Arg Ser Asp Ala Gly Lys Tyr Arg Cys Glu Val Ser

```
                100                 105                 110
Ala Pro Ser Glu Gln Gly Gln Asn Leu Glu Glu Asp Thr Val Thr Leu
            115                 120                 125
Glu Val Leu Gly Asp Val His Val Leu Ala Pro Ala Val Pro Ser Cys
    130                 135                 140
Glu Val Pro Ser Ser Ala Leu Ser Gly Thr Val Val Glu Leu Arg Cys
145                 150                 155                 160
Gln Asp Lys Glu Gly Asn Pro Ala Pro Glu Tyr Thr Trp Phe Lys Asp
                165                 170                 175
Gly Ile Arg Leu Leu Glu Asn Pro Arg Leu Gly Ser Gln Ser Thr Asn
                180                 185                 190
Ser Ser Tyr Thr Met Asn Thr Lys Thr Gly Thr Leu Gln Phe Asn Thr
            195                 200                 205
Val Ser Lys Leu Asp Thr Gly Glu Tyr Ser Cys Glu Ala Arg Asn Ser
    210                 215                 220
Val Gly Tyr Arg Arg Cys Pro Gly Lys Arg Met Gln Val Asp Asp Leu
225                 230                 235                 240
Asn Ile Ser Gly Ile Ile Ala Ala Val Val Val Val Ala Leu Val Ile
                245                 250                 255
Ser Val Cys Gly Leu Gly Val Cys Tyr Ala Gln Arg Lys Gly Tyr Phe
            260                 265                 270
Ser Lys Glu Thr Ser Phe Gln Lys Ser Asn Ser Ser Ser Lys Ala Thr
        275                 280                 285
Thr Met Ser Glu Asn Asp Phe Lys His Thr Lys Ser Phe Ile Ile  *
    290                 295                 300         303


<210> 1219
<211> 1126
<212> PRT
<213> Homo sapiens


<400> 1219
Met Trp Phe Leu Phe Leu Cys Pro Asn Leu Trp Ala Met Pro Val Gln
  1               5                  10                  15
Ile Ile Met Gly Val Ile Leu Leu Tyr Asn Leu Leu Gly Ser Ser Ala
            20                  25                  30
Leu Val Gly Ala Ala Val Ile Val Leu Leu Ala Pro Ile Gln Tyr Phe
        35                  40                  45
Ile Ala Thr Lys Leu Ala Glu Ala Gln Lys Ser Thr Leu Asp Tyr Ser
    50                  55                  60
Thr Glu Arg Leu Lys Lys Thr Asn Glu Ile Leu Lys Gly Ile Lys Leu
65                  70                  75                  80
Leu Lys Leu Tyr Ala Trp Glu His Ile Phe Cys Lys Ser Val Glu Glu
                85                  90                  95
Thr Arg Met Lys Glu Leu Ser Ser Leu Lys Thr Phe Ala Leu Tyr Thr
            100                 105                 110
Ser Leu Ser Ile Phe Met Asn Ala Ala Ile Pro Ile Ala Ala Val Leu
        115                 120                 125
Ala Thr Phe Val Thr His Ala Tyr Ala Ser Gly Asn Asn Leu Lys Pro
    130                 135                 140
Ala Glu Ala Phe Ala Ser Leu Ser Leu Phe His Ile Leu Val Thr Pro
145                 150                 155                 160
Leu Phe Leu Leu Ser Thr Val Val Arg Phe Ala Val Lys Ala Ile Ile
                165                 170                 175
Ser Val Gln Lys Leu Asn Glu Phe Leu Leu Ser Asp Glu Ile Gly Asp
            180                 185                 190
```

Asp Ser Trp Arg Thr Gly Glu Ser Ser Leu Pro Phe Glu Ser Cys Lys
195 200 205
Lys His Thr Gly Val Gln Pro Lys Thr Ile Asn Arg Lys Gln Pro Gly
210 215 220
Arg Tyr His Leu Asp Ser Tyr Glu Gln Ser Thr Arg Arg Leu Arg Pro
225 230 235 240
Ala Glu Thr Glu Asp Ile Ala Ile Lys Val Thr Asn Gly Tyr Phe Ser
245 250 255
Trp Gly Ser Gly Leu Ala Thr Leu Ser Asn Ile Asp Ile Arg Ile Pro
260 265 270
Thr Gly Gln Leu Thr Met Ile Val Gly Gln Val Gly Cys Gly Lys Ser
275 280 285
Ser Leu Leu Leu Ala Ile Leu Gly Glu Met Gln Thr Leu Glu Gly Lys
290 295 300
Val His Trp Ser Asn Val Asn Glu Ser Glu Pro Ser Phe Glu Ala Thr
305 310 315 320
Arg Ser Arg Asn Arg Tyr Ser Val Ala Tyr Ala Ala Gln Lys Pro Trp
325 330 335
Leu Leu Asn Ala Thr Val Glu Glu Asn Ile Thr Phe Gly Ser Pro Phe
340 345 350
Asn Lys Gln Arg Tyr Lys Ala Val Thr Asp Ala Cys Ser Leu Gln Pro
355 360 365
Asp Ile Asp Leu Leu Pro Phe Gly Asp Gln Thr Glu Ile Gly Glu Arg
370 375 380
Gly Ile Asn Leu Ser Gly Gly Gln Arg Gln Arg Ile Cys Val Ala Arg
385 390 395 400
Ala Leu Tyr Gln Asn Thr Asn Ile Val Phe Leu Asp Asp Pro Phe Ser
405 410 415
Ala Leu Asp Ile His Leu Ser Asp His Leu Met Gln Glu Gly Ile Leu
420 425 430
Lys Phe Leu Gln Asp Asp Lys Arg Thr Leu Val Leu Val Thr His Lys
435 440 445
Leu Gln Tyr Leu Thr His Ala Asp Trp Ile Ile Ala Met Lys Asp Gly
450 455 460
Ser Val Leu Arg Glu Gly Thr Leu Lys Asp Ile Gln Thr Lys Asp Val
465 470 475 480
Glu Leu Tyr Glu His Trp Lys Thr Leu Met Asn Arg Gln Asp Gln Glu
485 490 495
Leu Glu Lys Asp Met Glu Ala Asp Gln Thr Thr Leu Glu Arg Lys Thr
500 505 510
Leu Arg Arg Ala Met Tyr Ser Arg Glu Ala Lys Ala Gln Met Glu Asp
515 520 525
Glu Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Asp Asp Asn Met Ser
530 535 540
Thr Val Met Arg Leu Arg Thr Lys Met Pro Trp Lys Thr Cys Trp Arg
545 550 555 560
Tyr Leu Thr Ser Gly Gly Phe Phe Leu Leu Ile Leu Met Ile Phe Ser
565 570 575
Lys Leu Leu Lys His Ser Val Ile Val Ala Ile Asp Tyr Trp Leu Ala
580 585 590
Thr Trp Thr Ser Glu Tyr Ser Ile Asn Asn Thr Gly Lys Ala Asp Gln
595 600 605
Thr Tyr Tyr Val Ala Gly Phe Ser Ile Leu Cys Gly Ala Gly Ile Phe
610 615 620
Leu Cys Leu Val Thr Ser Leu Thr Val Glu Trp Met Gly Leu Thr Ala
625 630 635 640
Ala Lys Asn Leu His His Asn Leu Leu Asn Lys Ile Ile Leu Gly Pro
645 650 655
Ile Arg Phe Phe Asp Thr Thr Pro Leu Gly Leu Ile Leu Asn Arg Phe

```
                660                     665                     670
Ser Ala Asp Thr Asn Ile Ile Asp Gln His Ile Pro Pro Thr Leu Glu
            675                     680                     685
Ser Leu Thr Arg Ser Thr Leu Leu Cys Leu Ser Ala Ile Gly Met Ile
        690                     695                     700
Ser Tyr Ala Thr Pro Val Phe Leu Val Ala Leu Leu Pro Leu Gly Val
705                     710                     715                     720
Ala Phe Tyr Phe Ile Gln Lys Tyr Phe Arg Val Ala Ser Lys Asp Leu
                    725                     730                     735
Gln Glu Leu Asp Asp Ser Thr Gln Leu Pro Leu Leu Cys His Phe Ser
                740                     745                     750
Glu Thr Ala Glu Gly Leu Thr Thr Ile Arg Ala Phe Arg His Glu Thr
            755                     760                     765
Arg Phe Lys Gln Arg Met Leu Glu Leu Thr Asp Thr Asn Asn Ile Ala
        770                     775                     780
Tyr Leu Phe Leu Ser Ala Ala Asn Arg Trp Leu Glu Val Arg Thr Asp
785                     790                     795                     800
Tyr Leu Gly Ala Cys Ile Val Leu Thr Ala Ser Ile Ala Ser Ile Ser
                    805                     810                     815
Gly Ser Ser Asn Ser Gly Leu Val Gly Leu Gly Leu Leu Tyr Ala Leu
                820                     825                     830
Thr Ile Thr Asn Tyr Leu Asn Trp Val Val Arg Asn Leu Ala Asp Leu
            835                     840                     845
Glu Val Gln Met Gly Ala Val Lys Lys Val Asn Ser Phe Leu Thr Met
        850                     855                     860
Glu Ser Glu Asn Tyr Glu Gly Thr Met Asp Pro Ser Gln Val Pro Glu
865                     870                     875                     880
His Trp Pro Gln Glu Gly Glu Ile Lys Ile His Asp Leu Cys Val Arg
                    885                     890                     895
Tyr Glu Asn Asn Leu Lys Pro Val Leu Lys His Val Lys Ala Tyr Ile
                900                     905                     910
Lys Pro Gly Gln Lys Val Gly Ile Cys Gly Arg Thr Gly Ser Gly Lys
            915                     920                     925
Ser Ser Leu Ser Leu Ala Phe Phe Arg Met Val Asp Ile Phe Asp Gly
        930                     935                     940
Lys Ile Val Ile Asp Gly Ile Asp Ile Ser Lys Leu Pro Leu His Thr
945                     950                     955                     960
Leu Arg Ser Arg Leu Ser Ile Ile Leu Gln Asp Pro Ile Leu Phe Ser
                    965                     970                     975
Gly Ser Ile Arg Phe Asn Leu Asp Pro Glu Cys Lys Cys Thr Asp Asp
                980                     985                     990
Arg Leu Trp Glu Ala Leu Glu Ile Ala Gln Leu Lys Asn Met Val Lys
            995                     1000                    1005
Ser Leu Pro Gly Gly Leu Asp Ala Val Val Thr Glu Gly Gly Glu Asn
        1010                    1015                    1020
Phe Ser Val Gly Gln Arg Gln Leu Phe Cys Leu Ala Arg Ala Phe Val
1025                    1030                    1035                    1040
Arg Lys Ser Ser Ile Leu Ile Met Asp Glu Ala Thr Ala Ser Ile Asp
                    1045                    1050                    1055
Met Ala Thr Glu Asn Ile Leu Gln Lys Val Val Met Thr Ala Phe Ala
                1060                    1065                    1070
Asp Arg Thr Val Val Thr Met Ala His Arg Val Ser Ser Ile Met Asp
            1075                    1080                    1085
Ala Gly Leu Val Leu Val Phe Ser Glu Gly Ile Leu Val Glu Cys Asp
        1090                    1095                    1100
Thr Val Pro Asn Leu Phe Ala His Lys Asn Gly Pro Phe Ser Thr Leu
1105                    1110                    1115                    1120
Val Met Thr Asn Lys  *
                    1125
```

<210> 1220
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1220
Met Ser Ser Val Ser Leu Ile Glu Phe Pro Leu Tyr Met Ile Cys Pro
1 5 10 15
Phe Ala Leu Ala Ala Phe Lys Thr Phe Ser Leu Ala Leu Ile Leu Asp
20 25 30
Ile Leu Leu Thr Ile Phe Leu Asp Asp Ile His Phe Val *
35 40 45

<210> 1221
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1221
Met Leu Ile Leu Leu Leu Leu Glu Phe Gly Ile Thr Ile Ile Lys Val
1 5 10 15
Thr Cys Arg Leu Arg Ile Val Leu Cys Tyr Arg Lys Tyr Lys Thr Lys
20 25 30
Arg Asn Lys Lys Leu Lys Leu Gly Asn Asn Ser Lys Phe Gln Arg Met
35 40 45
Cys Leu Arg Thr Ser Phe His *
50 55

<210> 1222
<211> 253
<212> PRT
<213> Homo sapiens

<400> 1222
Met Gly Cys Ala Ile Ile Ala Gly Phe Leu His Tyr Leu Phe Leu Ala
1 5 10 15
Cys Phe Phe Trp Met Leu Val Glu Ala Val Ile Leu Phe Leu Met Val
20 25 30
Arg Asn Leu Lys Val Val Asn Tyr Phe Ser Ser Arg Asn Ile Lys Met
35 40 45
Leu His Ile Cys Ala Phe Gly Tyr Gly Leu Pro Met Leu Val Val Val
50 55 60
Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr Gly Met His Asn Arg Cys
65 70 75 80
Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp Ser Phe Leu Gly Pro Val
85 90 95
Cys Thr Val Ile Val Ile Asn Ser Leu Leu Leu Thr Trp Thr Leu Trp
100 105 110
Ile Leu Arg Gln Arg Leu Ser Ser Val Asn Ala Glu Val Ser Thr Leu

```
            115                 120                 125
Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala Phe Ala Gln Leu Phe Ile
        130                 135                 140
Leu Gly Cys Ser Trp Val Leu Gly Ile Phe Gln Ile Gly Pro Val Ala
145                 150                 155                 160
Gly Val Met Ala Tyr Leu Phe His His His Gln Gln Pro Ala Gly Gly
                165                 170                 175
Leu His Leu Pro His Pro Leu Ser Ala Gln Arg Pro Gly Thr Arg Arg
            180                 185                 190
Ile Gln Glu Val Asp His Trp Glu Asp Glu Ala Gln Leu Pro Val Pro
        195                 200                 205
Asp Leu Lys Asp Leu Ala Val Leu His Ala Ile Arg Phe Gln Asp Gly
    210                 215                 220
Leu Lys Ser Phe Leu Ala Phe Lys Tyr Ala Met Glu Pro Thr Val Gly
225                 230                 235                 240
Gly Thr Ser Ser Phe Pro Cys Arg Glu Pro Tyr Pro  *
                245                 250     252
```

```
<210> 1223
<211> 858
<212> PRT
<213> Homo sapiens
```

```
<400> 1223
Met Lys Met Leu Thr Arg Leu Gln Val Leu Thr Leu Ala Leu Phe Ser
  1               5                  10                  15
Lys Gly Phe Leu Leu Ser Leu Gly Asp His Asn Phe Leu Arg Arg Glu
             20                  25                  30
Ile Lys Ile Glu Gly Asp Leu Val Leu Gly Gly Leu Phe Pro Ile Asn
         35                  40                  45
Glu Lys Gly Thr Gly Thr Glu Glu Cys Gly Arg Ile Asn Glu Asp Arg
     50                  55                  60
Gly Ile Gln Arg Leu Glu Ala Met Leu Phe Ala Ile Asp Glu Ile Asn
 65                  70                  75                  80
Lys Asp Asp Tyr Leu Leu Pro Gly Val Lys Leu Gly Val His Ile Leu
                 85                  90                  95
Asp Thr Cys Ser Arg Asp Thr Tyr Ala Leu Glu Gln Ser Leu Glu Phe
            100                 105                 110
Val Arg Ala Ser Leu Thr Lys Val Asp Glu Ala Glu Tyr Met Cys Pro
        115                 120                 125
Asp Gly Ser Tyr Ala Ile Gln Glu Asn Ile Pro Leu Leu Ile Ala Gly
    130                 135                 140
Val Ile Gly Gly Ser Tyr Ser Arg Val Ser Ile Gln Gly Ala Asn Leu
145                 150                 155                 160
Leu Arg Leu Phe Gln Ile Pro Gln Ile Arg Tyr Ala Ser Thr Ser Ala
                165                 170                 175
Lys Leu Ser Asp Lys Ser Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro
            180                 185                 190
Pro Asp Phe Tyr Gln Ala Lys Ala Met Ala Glu Ile Leu Arg Phe Phe
        195                 200                 205
Asn Trp Thr Tyr Val Ser Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu
    210                 215                 220
Thr Gly Ile Glu Ala Phe Glu Gln Glu Ala Arg Leu Arg Asn Ile Cys
225                 230                 235                 240
Ile Ala Thr Ala Glu Lys Val Gly Arg Ser Asn Ile Arg Lys Ser Tyr
                245                 250                 255
```

Asp Ser Val Ile Arg Glu Leu Leu Gln Lys Pro Asn Ala Arg Val Val
260 265 270
Val Leu Phe Met Arg Ser Asp Asp Ser Arg Glu Leu Ile Ala Ala Ala
275 280 285
Ser Arg Ala Asn Ala Ser Phe Thr Trp Val Ala Ser Asp Gly Trp Gly
290 295 300
Ala Gln Glu Ser Ile Ile Lys Gly Ser Glu His Val Ala Tyr Gly Ala
305 310 315 320
Ile Thr Leu Glu Leu Ala Ser Gln Pro Val Arg Gln Phe Asp Arg Tyr
325 330 335
Phe Gln Ser Leu Asn Pro Tyr Asn Asn His Arg Asn Pro Trp Phe Arg
340 345 350
Asp Phe Trp Glu Gln Lys Phe Gln Cys Ser Leu Gln Asn Lys Arg Asn
355 360 365
His Arg Arg Val Cys Asp Lys His Leu Ala Ile Asp Ser Ser Asn Tyr
370 375 380
Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala Val Tyr Ala Met
385 390 395 400
Ala His Ala Leu His Lys Met Gln Arg Thr Leu Cys Pro Asn Thr Thr
405 410 415
Lys Leu Cys Asp Ala Met Lys Ile Leu Asp Gly Lys Lys Leu Tyr Lys
420 425 430
Asp Tyr Leu Leu Lys Ile Asn Phe Thr Ala Pro Phe Asn Pro Asn Lys
435 440 445
Asp Ala Asp Ser Ile Val Lys Phe Asp Thr Phe Gly Asp Gly Met Gly
450 455 460
Arg Tyr Asn Val Phe Asn Phe Gln Asn Val Gly Gly Lys Tyr Ser Tyr
465 470 475 480
Leu Lys Val Gly His Trp Ala Glu Thr Leu Ser Leu Asp Val Asn Ser
485 490 495
Ile His Trp Ser Arg Asn Ser Val Pro Thr Ser Gln Cys Ser Asp Pro
500 505 510
Cys Ala Pro Asn Glu Met Lys Asn Met Gln Pro Gly Asp Val Cys Cys
515 520 525
Trp Ile Cys Ile Pro Cys Glu Pro Tyr Glu Tyr Leu Ala Asp Glu Phe
530 535 540
Thr Cys Met Asp Cys Gly Ser Gly Gln Trp Pro Thr Ala Asp Leu Thr
545 550 555 560
Gly Cys Tyr Asp Leu Pro Glu Asp Tyr Ile Arg Trp Glu Asp Ala Trp
565 570 575
Ala Ile Gly Pro Val Thr Ile Ala Cys Leu Gly Phe Met Cys Thr Cys
580 585 590
Met Val Val Thr Val Phe Ile Lys His Asn Asn Thr Pro Leu Val Lys
595 600 605
Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Phe Gly Val Gly Leu
610 615 620
Ser Tyr Cys Met Thr Phe Phe Phe Ile Ala Lys Pro Ser Pro Val Ile
625 630 635 640
Cys Ala Leu Arg Arg Leu Gly Leu Gly Ser Ser Phe Ala Ile Cys Tyr
645 650 655
Ser Ala Leu Leu Thr Lys Thr Asn Cys Ile Ala Arg Ile Phe Asp Gly
660 665 670
Val Lys Asn Gly Ala Gln Arg Pro Lys Phe Ile Ser Pro Ser Ser Gln
675 680 685
Val Phe Ile Cys Leu Gly Leu Ile Leu Val Gln Ile Val Met Val Ser
690 695 700
Val Trp Leu Ile Leu Glu Ala Pro Gly Thr Arg Arg Tyr Thr Leu Ala
705 710 715 720
Glu Lys Arg Glu Thr Val Ile Leu Lys Cys Asn Val Lys Asp Ser Ser

```
                725                 730                 735
Met Leu Ile Ser Leu Thr Tyr Asp Val Ile Leu Val Ile Leu Cys Thr
            740                 745                 750
Val Tyr Ala Phe Lys Thr Arg Lys Cys Pro Glu Asn Phe Asn Glu Ala
        755                 760                 765
Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala
    770                 775                 780
Phe Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr Arg Val Gln Thr
785                 790                 795                 800
Thr Thr Met Cys Ile Ser Val Ser Leu Ser Gly Phe Val Val Leu Gly
                805                 810                 815
Cys Leu Phe Ala Pro Lys Val His Ile Ile Leu Phe Gln Pro Gln Lys
            820                 825                 830
Asn Val Val Thr His Arg Leu His Leu Asn Arg Phe Ser Val Ser Gly
        835                 840                 845
Thr Gly Thr His Ile Leu Ser Val Leu  *
    850                 855     857
```

<210> 1224
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1224

```
Met Ser His Met Val Pro Leu Ala Leu Leu Leu Pro Leu Phe Pro Thr
 1               5                  10                  15
Ser Arg Arg Ala Ala Leu Pro Phe Leu Pro Leu Phe Phe Gly Leu Met
            20                  25                  30
Phe Pro Ala Thr Thr Asp Leu Pro Pro Pro His Pro Ser Ala Asp Leu
        35                  40                  45
Ala Val His Cys Arg His Gly Gly Leu Ile Ser Asp Arg Lys Leu Arg
    50                  55                  60
Leu Ser Glu Arg  *
 65         68
```

<210> 1225
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1225

```
Met Cys Tyr His Thr Trp Leu Ile Phe Ile Phe Leu Val Glu Met Gly
 1               5                  10                  15
Phe Tyr His Val Gly Gln Ala Gly Phe Lys Leu Leu Ala Ser Ser Gly
            20                  25                  30
Pro Pro Ala Ser Ala Ser Gln Ser Ala Gly Ile Thr Gly Val Ser His
        35                  40                  45
His Ala Arg Pro Thr Phe  *
    50              54
```

<210> 1226

<211> 51
<212> PRT
<213> Homo sapiens

<400> 1226
Met Ile Leu Ser Leu Leu Lys Phe Phe Pro Leu Leu Ser Ser Asp Thr
1 5 10 15
Pro Asn Ser Ser Val Pro Leu Leu Thr Thr Pro Arg Asp Pro Pro Tyr
20 25 30
His Leu Ser Pro Cys Ser Ser Ser Tyr Phe Val Lys Glu Gly Phe Ser
35 40 45
Val Val *
50

<210> 1227
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1227
Met Ile Leu Phe Cys Val Met Val Phe Ile Leu Phe Ile Thr Phe His
1 5 10 15
Leu Gln Leu Pro Thr Val Gly Asp Val Thr Tyr Cys Phe Cys Ser Asn
20 25 30
Lys Leu Arg Lys Thr Arg Glu Leu Lys Lys Ile Ser Ser Asn *
35 40 45 46

<210> 1228
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1228
Met Phe Ser Thr Ala Phe Trp Pro Pro Phe Leu Asn Pro Ser Leu Met
1 5 10 15
Phe Phe Thr Leu Leu Cys Ser Asp Phe Met Pro Cys Glu Ala Val Cys
20 25 30
Ser Ser Ile Ile Tyr Ser Phe Ile Pro Val Thr Lys Thr Gln Gly Ala
35 40 45
Ala Pro His Thr Arg Gly Pro Gln Pro His Thr *
50 55 59

<210> 1229
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1229
Met Cys Glu Ser Thr Glu Leu Asn Met Thr Phe His Leu Phe Ile Val

```
  1               5                  10                 15
Ala Leu Ala Gly Ala Gly Ala Ala Val Ile Ala Met Val His Tyr Leu
            20                  25                  30
Met Val Leu Ser Ala Asn Trp Ala Tyr Val Lys Asp Ala Cys Arg Met
        35                  40                  45
Ala Glu Val  *
    50  51
```

<210> 1230
<211> 362
<212> PRT
<213> Homo sapiens

<400> 1230

```
Met Pro Val Ile Trp Ser Ala Leu Ser Ala Val Leu Leu Leu Ala Ser
  1               5                  10                  15
Ser Tyr Phe Val Gly Ala Leu Ile Val His Ala Asp Cys Phe Leu Met
            20                  25                  30
Arg Asn His Thr Ile Thr Glu Gln Pro Met Cys Phe Gln Arg Thr Thr
        35                  40                  45
Pro Leu Ile Leu Gln Glu Val Ala Ser Phe Leu Lys Arg Asn Lys His
    50                  55                  60
Gly Pro Phe Leu Leu Phe Val Ser Phe Leu His Val His Ile Pro Leu
 65                  70                  75                  80
Ile Thr Met Glu Asn Phe Leu Gly Lys Ser Leu His Gly Leu Tyr Gly
                 85                  90                  95
Asp Asn Val Lys Glu Met Asp Trp Met Val Gly Arg Ile Leu Asp Thr
            100                 105                 110
Leu Asp Val Glu Gly Leu Ser Asn Ser Thr Leu Ile Tyr Phe Thr Ser
        115                 120                 125
Asp His Gly Gly Ser Leu Glu Asn Gln Leu Gly Asn Thr Gln Tyr Gly
    130                 135                 140
Gly Trp Asn Gly Ile Tyr Lys Gly Gly Lys Gly Met Gly Gly Trp Glu
145                 150                 155                 160
Gly Gly Ile Arg Val Pro Gly Ile Phe Arg Trp Pro Gly Val Leu Pro
                165                 170                 175
Ala Gly Arg Val Ile Gly Glu Pro Thr Ser Leu Met Asp Val Phe Pro
            180                 185                 190
Thr Val Val Arg Leu Ala Gly Ser Glu Val Pro Gln Asp Arg Val Ile
        195                 200                 205
Asp Gly Gln Asp Leu Leu Pro Leu Leu Leu Gly Thr Ala Gln His Ser
    210                 215                 220
Asp His Glu Phe Leu Met His Tyr Cys Glu Arg Phe Leu His Ala Ala
225                 230                 235                 240
Arg Trp His Gln Arg Asp Arg Gly Thr Met Trp Lys Val His Phe Val
                245                 250                 255
Thr Pro Val Phe Gln Pro Arg Gly Ser Arg Cys Leu Leu Trp Lys Glu
            260                 265                 270
Lys Val Cys Pro Cys Phe Gly Glu Lys Ser Ser Pro Pro Arg Ser His
        275                 280                 285
Pro Cys Phe Phe Asp Leu Ser Arg Ala Pro Ser Glu Thr His Ile Leu
    290                 295                 300
Thr Pro Ala Ser Glu Pro Val Phe Tyr Gln Val Met Glu Arg Ser Pro
305                 310                 315                 320
Ala Gly Gly Val Gly Thr Pro Ala Asp Thr Gln Pro Ser Ser Ser Ala
                325                 330                 335
```

Ala Gly Gln Ala Gly Gln Tyr Leu Glu Thr Gly Gly Ala Ala Leu Leu
340 345 350
Trp Ala Val Pro Pro Leu Val Gly Pro *
355 360 361

<210> 1231
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1231
Met Leu Arg Leu Gly Val Ala Phe His Met Glu Leu Leu Cys Arg Gly
1 5 10 15
Arg Leu Leu Leu Leu Ile Pro Thr Ala Glu Thr Arg Cys Asp His Arg
20 25 30
Arg Leu Gln Asn Leu Lys Leu Gly Leu Ser Asn Thr Leu Asp Lys His
35 40 45
Gln Glu Pro His *
50 52

<210> 1232
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1232
Met Leu Asn Phe Ile Ser Pro Phe Gly Ser Thr Ile Leu Leu Leu Ile
1 5 10 15
Pro Ser Ala Leu Pro Pro Ser Pro Pro Ser Arg Cys Ser Leu Leu Ser
20 25 30
Pro Pro Pro Thr Thr Pro Leu Pro Leu Pro Leu Pro Ser Pro Phe Ser
35 40 45
Ser Pro Leu Leu Ser Phe Phe *
50 55

<210> 1233
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1233
Met Gln Leu His Val Ser Leu Pro Trp Leu Leu Arg Phe Pro Gly Leu
1 5 10 15
Asp Cys Thr Leu His Pro Asp Gln Pro Ser Ile Gln Leu Leu Gln Gly
20 25 30
Thr Ile Asp Leu Leu Asp Ser Val Ile Leu Ser Cys Ser Leu Cys Leu
35 40 45
Phe Gly Val Leu Gln Met His Ile
50 55 56

<210> 1234
<211> 125
<212> PRT
<213> Homo sapiens

<400> 1234
Met Leu Ser Gln Leu Pro Arg Cys Gln Ser Ser Val Pro Ala Leu Ala
1 5 10 15
His Pro Thr Arg Leu His Tyr Leu Leu Arg Leu Leu Thr Phe Leu Leu
20 25 30
Gly Pro Gly Ala Gly Gly Ala Glu Ala Gln Gly Met Leu Gly Arg Ala
35 40 45
Leu Leu Leu Ser Ser Leu Pro Asp Asn Cys Ser Phe Trp Asp Ala Phe
50 55 60
Arg Pro Glu Gly Arg Arg Ser Val Leu Arg Thr Ile Gly Glu Tyr Leu
65 70 75 80
Glu Gln Asp Glu Glu Gln Pro Thr Pro Ser Gly Phe Glu Pro Thr Val
85 90 95
Asn Pro Ser Ser Gly Ile Ser Lys Met Glu Leu Leu Ala Cys Phe Ser
100 105 110
Val Ser Ala Leu Pro Glu Gly Lys Leu Leu Glu Gln *
115 120 124

<210> 1235
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1235
Met Phe Cys Phe Leu His Val Phe Leu Val Ser Leu Pro Phe Leu Thr
1 5 10 15
Ser Tyr Ser Cys Leu Gln Ile Ile Ser Tyr Ser Ser Phe Lys Ala Trp
20 25 30
Phe Lys Tyr Pro Phe Leu Cys Lys Ile Phe Pro Thr Leu Pro Asn Asn
35 40 45
Asp Ser Leu Gln Gln Thr Pro Leu Val His Gly Val Cys Leu Gln Gln
50 55 60
Gly Val His His Arg Leu Ile *
65 70 71

<210> 1236
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1236
Met Ala Pro Gly Gly Ala Lys Gly Gln Gly Ala Ser Ala Leu Ala Leu
1 5 10 15
Leu Phe Ile Leu Ala Ser Pro Ala Thr Gly Gly Gly Pro Arg Leu Trp
20 25 30

```
Arg Ala Gly Gly Leu Gly Phe Thr His Cys Gln Ala Asn Ser Thr Thr
        35                  40                  45          48
```

<210> 1237
<211> 208
<212> PRT
<213> Homo sapiens

<400> 1237

```
Met Ala Phe Leu Arg Lys Val Tyr Ser Ile Leu Ser Leu Gln Val Leu
  1               5                  10                  15
Leu Thr Thr Val Thr Ser Thr Val Phe Leu Tyr Phe Glu Ser Val Arg
             20                  25                  30
Thr Phe Val His Glu Ser Pro Ala Leu Ile Leu Leu Phe Ala Leu Gly
        35                  40                  45
Ser Leu Gly Leu Ile Phe Ala Leu Ile Leu Asn Arg His Lys Tyr Pro
    50                  55                  60
Leu Asn Leu Tyr Leu Leu Phe Gly Phe Thr Leu Leu Glu Ala Leu Thr
 65                  70                  75                  80
Val Ala Val Val Val Thr Phe Tyr Asp Val Tyr Ile Ile Leu Gln Ala
                 85                  90                  95
Phe Ile Leu Thr Thr Thr Val Phe Phe Gly Leu Thr Val Tyr Thr Leu
            100                 105                 110
Gln Ser Lys Lys Asp Phe Ser Lys Phe Gly Ala Gly Leu Phe Ala Leu
        115                 120                 125
Leu Trp Ile Leu Cys Leu Ser Gly Phe Leu Lys Phe Phe Phe Tyr Ser
    130                 135                 140
Glu Ile Met Glu Leu Val Leu Ala Ala Ala Gly Ala Leu Leu Phe Cys
145                 150                 155                 160
Gly Phe Ile Ile Tyr Asp Thr His Ser Leu Met His Lys Leu Ser Pro
                165                 170                 175
Glu Glu Tyr Val Leu Ala Ala Ile Ser Leu Tyr Leu Asp Ile Ile Asn
            180                 185                 190
Leu Phe Leu His Leu Leu Arg Phe Leu Glu Ala Val Asn Lys Lys  *
        195                 200                 205     207
```

<210> 1238
<211> 173
<212> PRT
<213> Homo sapiens

<400> 1238

```
Met Lys Val Val Pro Ser Leu Leu Leu Ser Val Leu Leu Ala Gln Val
  1               5                  10                  15
Trp Leu Val Pro Gly Leu Ala Pro Ser Pro Gln Ser Pro Glu Thr Pro
             20                  25                  30
Ala Pro Gln Asn Gln Thr Ser Arg Val Val Gln Ala Pro Lys Glu Glu
        35                  40                  45
Glu Glu Asp Glu Gln Glu Ala Ser Glu Glu Lys Ala Ser Glu Glu Glu
    50                  55                  60
Lys Ala Trp Leu Met Ala Ser Arg Gln Gln Leu Ala Lys Glu Thr Ser
```

65 70 75 80
Asn Phe Gly Phe Ser Leu Leu Arg Lys Ile Ser Met Arg His Asp Gly
85 90 95
Asn Met Val Phe Ser Pro Phe Gly Met Ser Leu Ala Met Thr Gly Leu
100 105 110
Met Leu Gly Ala Thr Gly Pro Thr Glu Thr Gln Ile Lys Arg Gly Leu
115 120 125
His Leu Gln Ala Leu Lys Pro Thr Lys Pro Gly Leu Leu Pro Ser Leu
130 135 140
Phe Lys Gly Leu Arg Glu Thr Leu Ser Arg Asn Leu Glu Leu Gly Leu
145 150 155 160
Thr Ala Gly Glu Phe Cys Leu His Pro Gln Gly Phe *
165 170 172

<210> 1239
<211> 357
<212> PRT
<213> Homo sapiens

<400> 1239
Met Ala Phe Leu Gly Leu Phe Ser Leu Leu Val Leu Gln Ser Met Ala
1 5 10 15
Thr Gly Ala Thr Phe Pro Glu Glu Ala Ile Ala Asp Leu Ser Val Asn
20 25 30
Met Tyr Asn Arg Leu Arg Ala Thr Gly Glu Asp Glu Asn Ile Leu Phe
35 40 45
Ser Pro Leu Ser Ile Ala Leu Ala Met Gly Met Met Glu Leu Gly Ala
50 55 60
Gln Gly Ser Thr Gln Lys Glu Ile Arg His Ser Met Gly Tyr Asp Ser
65 70 75 80
Leu Lys Asn Gly Glu Glu Phe Ser Phe Leu Lys Glu Phe Ser Asn Met
85 90 95
Val Thr Ala Lys Glu Ser Gln Tyr Val Met Lys Ile Ala Asn Ser Leu
100 105 110
Phe Val Gln Asn Gly Phe His Val Asn Glu Glu Phe Leu Gln Met Met
115 120 125
Lys Lys Tyr Phe Asn Ala Ala Val Asn His Val Asp Phe Ser Gln Asn
130 135 140
Val Ala Val Ala Asn Tyr Ile Asn Lys Trp Val Glu Asn Asn Thr Asn
145 150 155 160
Asn Leu Val Lys Asp Leu Val Ser Pro Arg Asp Phe Asp Ala Ala Thr
165 170 175
Tyr Leu Ala Leu Ile Asn Ala Val Tyr Phe Lys Gly Asn Trp Lys Ser
180 185 190
Gln Phe Arg Pro Glu Asn Thr Arg Thr Phe Ser Phe Thr Lys Asp Asp
195 200 205
Glu Ser Glu Val Gln Ile Pro Met Met Tyr Gln Gln Gly Glu Phe Tyr
210 215 220
Tyr Gly Glu Phe Ser Asp Gly Ser Asn Glu Ala Gly Gly Ile Tyr Gln
225 230 235 240
Val Leu Glu Ile Pro Tyr Glu Gly Asp Glu Ile Ser Met Met Leu Val
245 250 255
Leu Ser Arg Gln Glu Val Pro Leu Ala Thr Leu Glu Pro Leu Val Lys
260 265 270
Ala Gln Leu Val Glu Glu Trp Ala Asn Ser Val Lys Lys Gln Lys Val
275 280 285

Glu Val Tyr Leu Pro Arg Phe Thr Val Glu Gln Glu Ile Asp Leu Lys
290 295 300
Asp Val Leu Lys Ala Leu Gly Ile Thr Glu Ile Phe Ile Lys Asp Ala
305 310 315 320
Asn Leu Thr Gly Leu Ser Asp Asn Lys Glu Ile Phe Leu Ser Lys Ala
325 330 335
Ile His Lys Ser Phe Leu Glu Val Asn Glu Glu Ala Gln Lys Leu Leu
340 345 350
Leu Ser Gln Glu *
355 356

<210> 1240
<211> 707
<212> PRT
<213> Homo sapiens

<400> 1240
Met Leu Ser Leu Arg Arg Cys Thr Ser Met Arg Leu Cys Leu Ser Ser
1 5 10 15
Ser Leu Ala Ser Pro Cys Ser Thr Met Leu Ser Thr Val Val Leu Tyr
20 25 30
Lys Val Cys Asn Ser Phe Val Glu Met Gly Ser Ala Asn Val Gln Ala
35 40 45
Thr Asp Tyr Leu Lys Gly Val Ala Ser Leu Phe Val Val Ser Leu Gly
50 55 60
Gly Ala Ala Val Gly Leu Val Phe Ala Phe Leu Leu Ala Leu Thr Thr
65 70 75 80
Arg Phe Thr Lys Arg Val Arg Ile Ile Glu Pro Leu Leu Val Phe Leu
85 90 95
Leu Ala Tyr Ala Ala Tyr Leu Thr Ala Glu Met Ala Ser Leu Ser Ala
100 105 110
Ile Leu Ala Val Thr Met Cys Gly Leu Gly Cys Lys Lys Tyr Val Glu
115 120 125
Ala Asn Ile Ser His Lys Ser Arg Thr Thr Val Lys Tyr Thr Met Lys
130 135 140
Thr Leu Ala Ser Cys Ala Glu Thr Val Ile Phe Met Leu Leu Gly Ile
145 150 155 160
Ser Thr Val Asp Ser Ser Lys Trp Ala Trp Asp Ser Gly Leu Val Leu
165 170 175
Gly Thr Leu Ile Phe Ile Leu Phe Phe Arg Ala Leu Gly Val Val Leu
180 185 190
Gln Thr Trp Val Leu Asn Gln Phe Arg Leu Val Pro Leu Asp Lys Ile
195 200 205
Asp Gln Val Val Met Ser Tyr Gly Gly Leu Arg Gly Ala Val Ala Phe
210 215 220
Ala Leu Val Ile Leu Leu Asp Arg Thr Lys Val Pro Ala Lys Asp Tyr
225 230 235 240
Phe Val Ala Thr Thr Ile Val Val Val Phe Phe Thr Val Ile Val Gln
245 250 255
Gly Leu Thr Ile Lys Pro Leu Val Lys Trp Leu Lys Val Lys Arg Ser
260 265 270
Glu His His Lys Pro Thr Leu Asn Gln Glu Leu His Glu His Thr Phe
275 280 285
Asp His Ile Leu Ala Ala Val Glu Asp Val Val Gly His His Gly Tyr
290 295 300
His Tyr Trp Arg Asp Arg Trp Glu Gln Phe Asp Lys Lys Tyr Leu Ser

```
305                 310                 315                 320
Gln Leu Leu Met Arg Arg Ser Ala Tyr Arg Ile Arg Asp Gln Ile Trp
                325                 330                 335
Asp Val Tyr Tyr Arg Leu Asn Ile Arg Asp Ala Ile Ser Phe Val Asp
            340                 345                 350
Gln Gly Gly His Val Leu Ser Ser Thr Gly Leu Thr Leu Pro Ser Met
        355                 360                 365
Pro Ser Arg Asn Ser Val Ala Glu Thr Ser Val Thr Asn Leu Leu Arg
    370                 375                 380
Glu Ser Gly Ser Gly Ala Cys Leu Asp Leu Gln Val Ile Asp Thr Val
385                 390                 395                 400
Arg Ser Gly Arg Asp Arg Glu Asp Ala Val Met His His Leu Leu Cys
                405                 410                 415
Gly Gly Leu Tyr Lys Pro Arg Arg Arg Tyr Lys Ala Ser Cys Ser Arg
            420                 425                 430
His Phe Ile Ser Glu Asp Ala Gln Glu Arg Gln Asp Lys Glu Val Phe
        435                 440                 445
Gln Gln Asn Met Lys Arg Arg Leu Glu Ser Phe Lys Ser Thr Lys His
    450                 455                 460
Asn Ile Cys Phe Thr Lys Ser Lys Pro Arg Pro Arg Lys Thr Gly Arg
465                 470                 475                 480
Arg Lys Lys Asp Gly Val Ala Asn Ala Glu Ala Thr Asn Gly Lys His
                485                 490                 495
Arg Gly Leu Gly Phe Gln Asp Thr Ala Ala Val Ile Leu Thr Val Glu
            500                 505                 510
Ser Glu Glu Glu Glu Glu Glu Ser Asp Ser Ser Glu Thr Glu Lys Glu
        515                 520                 525
Asp Asp Glu Gly Ile Ile Phe Val Ala Arg Ala Thr Ser Glu Val Leu
    530                 535                 540
Gln Glu Gly Lys Val Ser Gly Ser Leu Glu Val Cys Pro Ser Pro Arg
545                 550                 555                 560
Ile Ile Pro Pro Ser Pro Thr Cys Ala Glu Lys Glu Leu Pro Trp Lys
                565                 570                 575
Ser Gly Gln Gly Asp Leu Ala Val Tyr Val Ser Ser Glu Thr Thr Lys
            580                 585                 590
Ile Val Pro Val Asp Met Gln Thr Gly Trp Asn Gln Ser Ile Ser Ser
        595                 600                 605
Leu Glu Ser Leu Ala Ser Pro Pro Cys Asn Gln Ala Pro Ile Leu Thr
    610                 615                 620
Cys Leu Pro Pro His Pro Arg Gly Thr Glu Glu Pro Gln Val Pro Leu
625                 630                 635                 640
His Leu Pro Ser Asp Pro Arg Ser Ser Phe Ala Phe Pro Pro Ser Leu
                645                 650                 655
Ala Lys Ala Gly Arg Ser Arg Ser Glu Ser Ser Ala Asp Leu Pro Gln
            660                 665                 670
Gln Gln Glu Leu Gln Pro Leu Met Gly His Lys Asp His Thr His Leu
        675                 680                 685
Ser Pro Gly Thr Ala Thr Ser His Trp Cys Ile Gln Phe Asn Arg Gly
    690                 695                 700
Ser Arg Leu
705     707
```

<210> 1241
<211> 98
<212> PRT
<213> Homo sapiens

<400> 1241
Met Ala Phe Arg Thr Phe Ser Trp Ile Phe Ser Gly Leu Leu Ser Pro
1 5 10 15
Thr Leu Ala Ser Pro Ser Val Ser Met Met Thr Met Glu Val Leu Leu
20 25 30
Ser Gly Ile Leu Cys Ser Ser Arg Ala Leu Phe Ser Ile Leu Met Pro
35 40 45
Leu Ser Ser Pro Ser Leu Met Leu Val Ile Pro Leu Ser Ser Met Leu
50 55 60
Phe Thr Asn Val Leu Ala Ser Trp Arg Phe Ser Gly Val Ala Trp Thr
65 70 75 80
Lys Cys Ser Phe His Val Asp Thr Ser Pro Leu Asn Arg Met Lys Phe
85 90 95
Arg *
97

<210> 1242
<211> 422
<212> PRT
<213> Homo sapiens

<400> 1242
Met Val Leu Trp Glu Ser Pro Arg Gln Cys Ser Ser Trp Thr Leu Cys
1 5 10 15
Glu Gly Phe Cys Trp Leu Leu Leu Leu Pro Val Met Leu Leu Ile Val
20 25 30
Ala Arg Pro Val Lys Leu Ala Ala Phe Pro Thr Ser Leu Ser Asp Cys
35 40 45
Gln Thr Pro Thr Gly Trp Asn Cys Ser Gly Tyr Asp Asp Arg Glu Asn
50 55 60
Asp Leu Phe Leu Cys Asp Thr Asn Thr Cys Lys Phe Asp Gly Glu Cys
65 70 75 80
Leu Arg Ile Gly Asp Thr Val Thr Cys Val Cys Gln Phe Lys Cys Asn
85 90 95
Asn Asp Tyr Val Pro Val Cys Gly Ser Asn Gly Glu Ser Tyr Gln Asn
100 105 110
Glu Cys Tyr Leu Arg Gln Ala Ala Cys Lys Gln Gln Ser Glu Ile Leu
115 120 125
Val Val Ser Glu Gly Ser Cys Ala Thr Asp Ala Gly Ser Gly Ser Gly
130 135 140
Asp Gly Val His Glu Gly Ser Gly Glu Thr Ser Gln Lys Glu Thr Ser
145 150 155 160
Thr Cys Asp Ile Cys Gln Phe Gly Ala Glu Cys Asp Glu Asn Ala Glu
165 170 175
Asp Val Trp Cys Val Cys Asn Ile Asp Cys Ser Gln Thr Asn Phe Asn
180 185 190
Pro Leu Cys Ala Ser Asp Gly Lys Ser Tyr Asp Asn Ala Cys Gln Ile
195 200 205
Lys Glu Ala Ser Cys Gln Lys Gln Glu Lys Ile Glu Val Leu Ser Leu
210 215 220
Gly Arg Cys Gln Asp Asn Thr Thr Thr Thr Thr Lys Ser Glu Asp Gly
225 230 235 240
His Tyr Ala Arg Thr Asp Tyr Ala Glu Asn Ala Asn Lys Leu Glu Glu
245 250 255
Ser Ala Arg Glu His His Ile Pro Cys Pro Glu His Tyr Asn Gly Phe

260 265 270
Cys Met His Gly Lys Cys Glu His Ser Ile Asn Met Gln Glu Pro Ser
275 280 285
Cys Arg Cys Asp Ala Gly Tyr Thr Gly Gln His Cys Glu Lys Lys Asp
290 295 300
Tyr Ser Val Leu Tyr Val Val Pro Gly Pro Val Arg Phe Pro Val Cys
305 310 315 320
Leu Asn Arg Ser Cys Asp Trp Asn Asn Ser Asp Cys Cys His Leu Cys
325 330 335
Gly Gly Pro Leu His His Lys Glu Met Pro Pro Glu Ala Asn Arg Ile
340 345 350
Pro Pro Asp Arg Ser Lys Ile Pro Gly His Tyr Ser Ser Arg Gln Tyr
355 360 365
Asn Lys Ser Arg Pro Thr Arg Leu Ile Leu Lys Gly Ala Cys Phe His
370 375 380
Ser Gly Trp Thr Thr Glu Ser Leu Asp Tyr Thr Ile Gln Tyr Tyr Arg
385 390 395 400
Gln Lys Asn Lys Thr Arg Asp Leu Thr His Val Cys Leu Ala Phe Val
405 410 415
Gly Asn Leu His Gln *
420 421

<210> 1243
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1243
Met Leu Phe Val Phe Ile Cys Ser Tyr Phe His Leu Ser Leu Phe Leu
1 5 10 15
Leu Phe Pro Phe Leu Pro Val Ser Leu Pro Ser Phe Leu Pro Phe Phe
20 25 30
Leu Pro Ser Phe Leu Glu Phe Thr Glu Val Phe Pro Arg *
35 40 45

<210> 1244
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1244
Met Val Leu Ser Ala Pro Ser Leu Trp Pro Cys Ser Ser Phe Ser Ile
1 5 10 15
Ser Cys Leu His Val Gly Leu Thr Ala Phe Leu Phe Gln Val Ala Phe
20 25 30
Leu Cys Leu Leu Cys Cys Val Glu Leu Leu Leu Asp Val *
35 40 45

<210> 1245
<211> 244
<212> PRT

<213> Homo sapiens

<400> 1245
Met Ala Gly Val Ile Ala Gly Leu Leu Met Phe Ile Ile Ile Leu Leu
1 5 10 15
Gly Val Met Leu Thr Ile Lys Arg Arg Arg Asn Ala Tyr Ser Tyr Ser
20 25 30
Tyr Tyr Leu Lys Leu Ala Lys Lys Gln Lys Glu Thr Gln Ser Gly Ala
35 40 45
Gln Arg Glu Met Gly Pro Val Ala Ser Ala Asp Lys Pro Thr Thr Lys
50 55 60
Leu Ser Ala Ser Arg Asn Asp Glu Gly Phe Ser Ser Ser Ser Gln Asp
65 70 75 80
Val Asn Gly Phe Asn Gly Ser Arg Gly Glu Leu Ser Gln Pro Thr Leu
85 90 95
Thr Ile Gln Thr His Pro Tyr Arg Thr Cys Asp Pro Val Glu Met Ser
100 105 110
Tyr Pro Arg Asp Gln Phe Gln Pro Ala Ile Arg Val Ala Asp Leu Leu
115 120 125
Gln His Ile Thr Gln Met Lys Arg Gly Gln Gly Tyr Gly Phe Lys Glu
130 135 140
Glu Tyr Glu Ala Leu Pro Glu Gly Gln Thr Ala Ser Trp Asp Thr Ala
145 150 155 160
Lys Glu Asp Glu Asn Arg Asn Lys Asn Arg Tyr Gly Asn Ile Ile Ser
165 170 175
Tyr Asp His Ser Arg Val Arg Leu Leu Val Leu Asp Gly Asp Pro His
180 185 190
Ser Asp Tyr Ile Asn Ala Asn Tyr Ile Asp Gly Tyr His Arg Pro Arg
195 200 205
His Tyr Ile Ala Thr Gln Gly Pro Met Gln Glu Thr Val Lys Asp Phe
210 215 220
Trp Arg Met Ile Trp Gln Glu Asn Ser Ala Ser Ile Val Met Val Thr
225 230 235 240
Asn Pro Gly *
243

<210> 1246
<211> 565
<212> PRT
<213> Homo sapiens

<400> 1246
Met Ala Val Phe Arg Ser Gly Leu Leu Val Leu Thr Thr Pro Leu Ala
1 5 10 15
Ser Leu Ala Pro Arg Leu Ala Ser Ile Leu Thr Ser Ala Ala Arg Leu
20 25 30
Val Asn His Thr Leu Tyr Val His Leu Gln Pro Gly Met Ser Leu Glu
35 40 45
Gly Pro Ala Gln Pro Gln Tyr Ser Pro Val Gln Ala Thr Phe Glu Val
50 55 60
Leu Asp Phe Ile Thr His Leu Tyr Ala Gly Ala Asp Val His Arg His
65 70 75 80
Leu Asp Val Arg Ile Leu Leu Thr Asn Ile Arg Thr Lys Ser Thr Phe
85 90 95
Leu Pro Pro Leu Pro Thr Ser Val Gln Asn Leu Ala His Pro Pro Glu

```
                100                 105                 110
Val Val Leu Thr Asp Phe Gln Thr Leu Asp Gly Ser Gln Tyr Asn Pro
        115                 120                 125
Val Lys Gln Gln Leu Val Arg Tyr Ala Thr Ser Cys Tyr Ser Cys Cys
    130                 135                 140
Pro Arg Leu Ala Ser Val Leu Leu Tyr Ser Asp Tyr Gly Ile Gly Glu
145                 150                 155                 160
Val Pro Val Glu Pro Leu Asp Val Pro Leu Pro Ser Thr Ile Arg Pro
                165                 170                 175
Ala Ser Pro Val Ala Gly Ser Pro Lys Gln Pro Val Arg Gly Tyr Tyr
            180                 185                 190
Arg Gly Ala Val Gly Gly Thr Phe Asp Arg Leu His Asn Ala His Lys
        195                 200                 205
Val Leu Leu Ser Val Ala Cys Ile Leu Ala Gln Glu Gln Leu Val Val
    210                 215                 220
Gly Val Ala Asp Lys Asp Leu Leu Lys Ser Lys Leu Leu Pro Glu Leu
225                 230                 235                 240
Leu Gln Pro Tyr Thr Glu Arg Val Glu His Leu Ser Glu Phe Leu Val
                245                 250                 255
Asp Ile Lys Pro Ser Leu Thr Phe Asp Val Ile Pro Leu Leu Asp Pro
            260                 265                 270
Tyr Gly Pro Ala Gly Ser Asp Pro Ser Leu Glu Phe Leu Val Val Ser
        275                 280                 285
Glu Glu Thr Tyr Arg Gly Gly Met Ala Ile Asn Arg Phe Arg Leu Glu
    290                 295                 300
Asn Asp Leu Glu Glu Leu Ala Leu Tyr Gln Ile Gln Leu Leu Lys Asp
305                 310                 315                 320
Leu Arg His Thr Glu Asn Glu Glu Asp Lys Val Ser Ser Ser Ser Phe
                325                 330                 335
Arg Gln Arg Met Leu Gly Asn Leu Leu Arg Pro Pro Tyr Glu Arg Pro
            340                 345                 350
Glu Leu Pro Thr Cys Leu Tyr Val Ile Gly Leu Thr Gly Ile Ser Gly
        355                 360                 365
Ser Gly Lys Ser Ser Ile Ala Gln Arg Leu Lys Gly Leu Gly Ala Phe
    370                 375                 380
Val Ile Asp Ser Asp His Leu Gly His Arg Ala Tyr Ala Pro Gly Gly
385                 390                 395                 400
Pro Ala Tyr Gln Pro Val Val Glu Ala Phe Gly Thr Asp Ile Leu His
                405                 410                 415
Lys Asp Gly Ile Ile Asn Arg Lys Val Leu Gly Ser Arg Val Phe Gly
            420                 425                 430
Asn Lys Lys Gln Leu Lys Ile Leu Thr Asp Ile Met Trp Pro Ile Ile
        435                 440                 445
Ala Lys Leu Ala Arg Glu Glu Met Asp Arg Ala Val Ala Glu Gly Lys
    450                 455                 460
Arg Val Cys Val Ile Asp Ala Ala Val Leu Leu Glu Ala Gly Trp Gln
465                 470                 475                 480
Asn Leu Val His Glu Val Trp Thr Ala Val Ile Pro Glu Thr Glu Ala
                485                 490                 495
Val Arg Arg Ile Val Glu Arg Asp Gly Leu Ser Glu Ala Ala Ala Gln
            500                 505                 510
Ser Arg Leu Gln Ser Gln Met Ser Gly Gln Gln Leu Val Glu Gln Ser
        515                 520                 525
His Val Val Leu Ser Thr Leu Trp Glu Pro His Ile Thr Gln Arg Gln
    530                 535                 540
Val Glu Lys Ala Trp Ala Leu Leu Gln Lys Arg Ile Pro Lys Thr His
545                 550                 555                 560
Gln Ala Leu Asp  *
            564
```

<210> 1247
<211> 737
<212> PRT
<213> Homo sapiens

<400> 1247
Met Phe Pro Ala Gly Pro Pro Trp Pro Arg Val Arg Val Val Gln Val
1   5   10   15
Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser Trp Arg Leu Trp Ala
            20   25   30
Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val Val Leu Asn Glu Phe
        35   40   45
Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser Phe Phe Glu Gln Glu
    50   55   60
Pro Val Asp Thr Val Ser Ser Leu Phe His Met Leu Val Asp Ser Pro
65   70   75   80
Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro Tyr Tyr Leu Lys Ile
                85   90   95
Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp Leu Val Arg Met Gly
            100   105   110
His Leu Thr Gly Leu Lys Pro Leu Val Leu Val Thr Phe Gln Ser Pro
        115   120   125
Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu Gln Ile Gln Met Glu
    130   135   140
Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly Gly Gly Gly Arg Asp
145   150   155   160
Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe Leu Lys Arg Asp Arg
                165   170   175
Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu Leu Phe Asn Leu Met
            180   185   190
Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro Leu Trp His Thr Val
        195   200   205
Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile Pro Asn Glu Lys Tyr
    210   215   220
Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe Ser Leu Val Glu Val
225   230   235   240
Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser Cys Trp Val Gly Ser
                245   250   255
Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr Ile Tyr Asp Thr Ile
            260   265   270
Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn Gln Leu Val Tyr Tyr
        275   280   285
Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg Asn Arg Gly Ser Gly
    290   295   300
Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu Gly Thr Leu Val Asn
305   310   315   320
Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu Ala Ser Glu Cys Ile
                325   330   335
Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn Gly Ser Glu Tyr Ile
            340   345   350
Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr Val His Phe Gly Thr
        355   360   365
Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser Glu Tyr Ile Ala Gly
    370   375   380
Glu Tyr Thr Leu Leu Leu Leu Val Glu Ser Gly Tyr Gly Asn Ala Ser

385 390 395 400
Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala Ser Asp Asp Leu Glu
405 410 415
Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu Ala Arg Gly Leu Glu
420 425 430
Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr Ser Thr Ala Met Ala
435 440 445
Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn Leu Ile Phe Ile Trp
450 455 460
Gly Asn Phe Leu Leu Gln Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu
465 470 475 480
Ala Asp Phe Pro Lys Glu Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe
485 490 495
Arg Gly Ala Val Ala Ile Val Thr Glu Thr Glu Glu Ile Trp Tyr Leu
500 505 510
Leu Glu Gly Ser Tyr Arg Val Tyr Gln Leu Phe Pro Ser Lys Gly Trp
515 520 525
Gln Val His Ile Ser Leu Lys Leu Met Gln Gln Ser Ser Leu Tyr Ala
530 535 540
Ser Asn Glu Thr Met Leu Thr Leu Phe Tyr Glu Asp Ser Lys Leu Tyr
545 550 555 560
Gln Leu Val Tyr Leu Met Asn Asn Gln Lys Gly Gln Leu Val Lys Arg
565 570 575
Leu Val Pro Val Glu Gln Leu Leu Met Tyr Gln Gln His Thr Ser His
580 585 590
Tyr Asp Leu Glu Arg Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp
595 600 605
Phe Cys Pro Phe Ser Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln
610 615 620
Arg Tyr Thr Arg Gln Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu
625 630 635 640
Glu Arg Ser Gly Phe Pro Gln Gly Glu Leu Ala Arg His Leu Pro Gly
645 650 655
Pro Gly Leu Leu Pro Ala Val Ala Ala Leu Arg Val Arg Gln Ala Val
660 665 670
Arg Gly Pro Gly Ala Arg Pro His Leu Ala Leu Val Gly Glu Gln Gln
675 680 685
Thr Arg Pro Gly Leu Leu Leu Leu Leu Gly Glu Gln Leu Ala Lys Arg
690 695 700
Gly Arg Arg Val His Arg Asn Gly Gln Leu Arg Lys Asp Leu Gln Pro
705 710 715 720
Arg Val Arg Val Arg Ala Ala Gly Ala His Phe Pro Gly Gln Gly His
725 730 735 736
*

<210> 1248
<211> 175
<212> PRT
<213> Homo sapiens

<400> 1248
Met Gly Trp Val Trp Thr Leu Cys Thr Ala Ser Ala Cys Leu Thr Leu
1 5 10 15
Leu Phe Trp Ser Gln Thr Pro Gly Lys Ala Phe Gln Ile Pro Cys Pro
20 25 30

Pro Pro His Leu Ser His Trp Cys Leu Ser Pro Met Gln Met Asp Asp
35 40 45
Gly Cys Ala Arg Leu Cys Val Leu Trp Thr Ala Trp Met Arg Trp Arg
50 55 60
Val Leu Met Cys Ser Cys Arg Val Trp Ala Thr Asp Leu Gly Ile Phe
65 70 75 80
Leu Gly Val Ala Leu Gly Asn Glu Pro Leu Glu Met Trp Pro Leu Thr
85 90 95
Gln Asn Glu Glu Cys Thr Val Thr Gly Phe Leu Arg Asp Lys Leu Gln
100 105 110
Tyr Arg Ser Arg Leu Gln Tyr Met Lys His Tyr Phe Pro Ile Asn Tyr
115 120 125
Lys Ile Arg Val Pro Tyr Glu Gly Val Phe Arg Ile Ala Asn Val Thr
130 135 140
Arg Leu Arg Ala Gln Gly Ser Glu Arg Glu Leu Arg Tyr Leu Gly Val
145 150 155 160
Leu Val Ser Leu Ser Ala Thr Glu Ser Val His Asp Glu Leu Leu
165 170 175

<210> 1249
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1249
Met Phe His Arg Cys Arg Leu Lys Ala Gly Leu Met Leu Trp Arg Ser
1 5 10 15
Leu Glu Ser Gly Leu Cys Ala Gly Ala His Arg Leu Trp Leu Glu Gly
20 25 30
Pro Met Ala Phe Pro Glu Leu Gly Glu Lys Asp Pro Leu Leu Ala Ser
35 40 45
Pro Leu Ala Leu Ile Pro Gln Ser Leu Ile Gly Leu Gly Gly Leu Arg
50 55 60
Gly Ala Trp *
65 67

<210> 1250
<211> 209
<212> PRT
<213> Homo sapiens

<400> 1250
Met Ser Phe Cys Phe Thr Phe Leu Ser Leu Leu Pro Ala Cys Ile Lys
1 5 10 15
Leu Ile Leu Gln Pro Ser Ser Lys Gly Phe Lys Phe Thr Leu Val Ser
20 25 30
Cys Ala Leu Ser Phe Phe Leu Phe Ser Phe Gln Val His Glu Lys Ser
35 40 45
Ile Leu Leu Val Ser Leu Pro Val Cys Leu Val Leu Ser Glu Ile Pro
50 55 60
Phe Met Ser Thr Trp Phe Leu Leu Val Ser Thr Phe Ser Met Leu Pro
65 70 75 80
Leu Leu Leu Lys Asp Glu Leu Leu Met Pro Ser Val Val Thr Thr Met

```
                    85                      90                      95
Ala Phe Phe Ile Ala Cys Val Thr Ser Phe Ser Ile Phe Glu Lys Thr
                100                     105                     110
Ser Glu Glu Glu Leu Gln Leu Lys Ser Phe Ser Ile Ser Val Arg Lys
            115                     120                     125
Tyr Leu Pro Cys Phe Thr Phe Leu Ser Arg Ile Ile Gln Tyr Leu Phe
    130                     135                     140
Leu Ile Ser Val Ile Thr Met Val Leu Leu Thr Leu Met Thr Val Thr
145                     150                     155                     160
Leu Asp Pro Pro Gln Lys Leu Pro Asp Leu Phe Ser Val Leu Val Cys
                165                     170                     175
Phe Val Ser Cys Leu Asn Phe Leu Phe Phe Leu Val Tyr Phe Asn Ile
            180                     185                     190
Ile Ile Met Trp Asp Ser Lys Ser Gly Arg Asn Gln Lys Lys Ile Ser
        195                     200                     205         208
 *
```

```
<210> 1251
<211> 58
<212> PRT
<213> Homo sapiens
```

```
<400> 1251
Met Ile Leu Leu Leu Ser Thr Phe Phe Cys Cys Phe Arg Glu Asp Ser
 1               5                  10                  15
Cys Phe Tyr Lys Lys Tyr Val Gly Leu Val Gln Trp Leu Met Pro Val
            20                  25                  30
Ile Pro Ala Leu Trp Glu Ala Lys Val Gly Gly Ser Leu Glu Val Trp
        35                  40                  45
Ser Ser Arg Pro Ala Trp Pro Ile Arg  *
    50                  55      57
```

```
<210> 1252
<211> 84
<212> PRT
<213> Homo sapiens
```

```
<400> 1252
Met Tyr Lys Asn Phe Cys Leu Phe Phe Ile Phe Ala Leu Tyr Gln Gly
 1               5                  10                  15
Leu Ala Asn Tyr Gly Leu Trp Ala Asn Ser Asn Pro Leu His Val Ser
            20                  25                  30
Val Tyr Lys Ile Leu Leu Gly Cys Val Pro Trp Leu Leu Ser Val Val
        35                  40                  45
Ser Ala Ser Arg Val Ala Gly Thr Thr Gly Thr His His Tyr Ala Trp
    50                  55                  60
Ile Ile Phe Cys Ile Phe Ser Thr Asp Gly Val Ser Pro Arg Trp Pro
65                  70                  75                  80
Arg Trp Ser  *
        83
```

<210> 1253
<211> 73
<212> PRT
<213> Homo sapiens

<400> 1253
Met Glu Phe Gly Leu Ser Trp Leu Phe Leu Val Ala Ile Leu Lys Gly
1 5 10 15
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
20 25 30
Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45
Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Glu
50 55 60
Gly Ala Gly Val Gly Leu Arg Phe *
65 70 72

<210> 1254
<211> 209
<212> PRT
<213> Homo sapiens

<400> 1254
Met Ser Phe Cys Phe Thr Phe Leu Ser Leu Leu Pro Ala Cys Ile Lys
1 5 10 15
Leu Ile Leu Gln Pro Ser Ser Lys Gly Phe Lys Phe Thr Leu Val Ser
20 25 30
Cys Ala Leu Ser Phe Phe Leu Phe Ser Phe Gln Val His Glu Lys Ser
35 40 45
Ile Leu Leu Val Ser Leu Pro Val Cys Leu Val Leu Ser Glu Ile Pro
50 55 60
Phe Met Ser Thr Trp Phe Leu Leu Val Ser Thr Phe Ser Met Leu Pro
65 70 75 80
Leu Leu Leu Lys Asp Glu Leu Leu Met Pro Ser Val Val Thr Thr Met
85 90 95
Ala Phe Phe Ile Ala Cys Val Thr Ser Phe Ser Ile Phe Glu Lys Thr
100 105 110
Ser Glu Glu Glu Leu Gln Leu Lys Ser Phe Ser Ile Ser Val Arg Lys
115 120 125
Tyr Leu Pro Cys Phe Thr Phe Leu Ser Arg Ile Ile Gln Tyr Leu Phe
130 135 140
Leu Ile Ser Val Ile Thr Met Val Leu Leu Thr Leu Met Thr Val Thr
145 150 155 160
Leu Asp Pro Pro Gln Lys Leu Pro Asp Leu Phe Ser Val Leu Val Cys
165 170 175
Phe Val Ser Cys Leu Asn Phe Leu Phe Phe Leu Val Tyr Phe Asn Ile
180 185 190
Ile Ile Met Trp Asp Ser Lys Ser Gly Arg Asn Gln Lys Lys Ile Ser
195 200 205 208
*

<210> 1255
<211> 730
<212> PRT
<213> Homo sapiens

<400> 1255
Met Gly Pro Trp Gly Trp Lys Leu Arg Trp Thr Val Ala Leu Leu Leu
1   5   10   15
Ala Ala Ala Gly Thr Ala Val Gly Asp Arg Cys Glu Arg Asn Glu Phe
            20   25   30
Gln Cys Gln Asp Gly Lys Cys Ile Ser Tyr Lys Trp Val Cys Asp Gly
        35   40   45
Ser Ala Glu Cys Gln Asp Gly Ser Asp Glu Ser Gln Glu Thr Cys Leu
    50   55   60
Ser Val Thr Cys Lys Ser Gly Asp Phe Ser Cys Gly Gly Arg Val Asn
65   70   75   80
Arg Cys Ile Pro Gln Phe Trp Arg Cys Asp Gly Gln Val Asp Cys Asp
                85   90   95
Asn Gly Ser Asp Glu Gln Gly Cys Pro Pro Lys Thr Cys Ser Gln Asp
            100   105   110
Glu Phe Arg Cys His Asp Gly Lys Cys Ile Ser Arg Gln Phe Val Cys
        115   120   125
Asp Ser Asp Arg Asp Cys Leu Asp Gly Ser Asp Glu Ala Ser Cys Pro
    130   135   140
Val Leu Thr Cys Gly Pro Ala Ser Phe Gln Cys Asn Ser Ser Thr Cys
145   150   155   160
Ile Pro Gln Leu Trp Ala Cys Asp Asn Asp Pro Asp Cys Glu Asp Gly
                165   170   175
Ser Asp Glu Trp Pro Gln Arg Cys Arg Gly Leu Tyr Val Phe Gln Gly
            180   185   190
Asp Ser Ser Pro Cys Ser Ala Phe Glu Phe His Cys Leu Ser Gly Glu
        195   200   205
Cys Ile His Ser Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys Lys Asp
    210   215   220
Lys Ser Asp Glu Glu Asn Cys Ala Val Ala Thr Cys Arg Pro Asp Glu
225   230   235   240
Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln Cys Asp
                245   250   255
Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys Val Asn
            260   265   270
Val Thr Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser Gly Glu
        275   280   285
Cys Ile Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys Arg Asp
    290   295   300
Trp Ser Asp Glu Pro Ile Lys Glu Cys Gly Thr Asn Glu Cys Leu Asp
305   310   315   320
Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile Gly Tyr
                325   330   335
Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg Arg Cys
            340   345   350
Glu Asp Ile Asp Glu Cys Gln Asp Pro Asp Thr Cys Ser Gln Leu Cys
        355   360   365
Val Asn Leu Glu Gly Gly Tyr Lys Cys Gln Cys Glu Glu Gly Phe Gln
    370   375   380
Leu Asp Pro His Thr Lys Ala Cys Lys Ala Val Gly Ser Ile Ala Tyr
385   390   395   400
Leu Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu Asp Arg
                405   410   415

```
Ser Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val Ala Leu
            420                 425                 430
Asp Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu Ser Gln
        435                 440                 445
Arg Met Ile Cys Ser Thr Gln Leu Asp Arg Ala His Gly Val Ser Ser
    450                 455                 460
Tyr Asp Thr Val Ile Ser Arg Asp Ile Gln Ala Pro Asp Gly Leu Ala
465                 470                 475                 480
Val Asp Trp Ile His Ser Asn Ile Tyr Trp Thr Asp Ser Val Leu Gly
                485                 490                 495
Thr Val Ser Val Ala Asp Thr Lys Gly Val Lys Arg Lys Thr Leu Phe
            500                 505                 510
Arg Glu Asn Gly Ser Lys Pro Arg Ala Ile Val Val Asp Pro Val His
        515                 520                 525
Gly Phe Met Tyr Trp Thr Asp Trp Gly Thr Pro Ala Lys Ile Lys Lys
    530                 535                 540
Gly Gly Leu Asn Gly Val Asp Ile Tyr Ser Leu Val Thr Glu Asn Ile
545                 550                 555                 560
Gln Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser Gly Arg Leu Tyr
                565                 570                 575
Trp Val Asp Ser Lys Leu His Ser Ile Ser Ser Ile Asp Val Asn Gly
            580                 585                 590
Gly Asn Arg Lys Thr Ile Leu Glu Asp Glu Lys Arg Leu Ala His Pro
        595                 600                 605
Phe Ser Leu Ala Val Phe Glu Asp Lys Val Phe Trp Thr Asp Ile Ile
    610                 615                 620
Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp Val Asn
625                 630                 635                 640
Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu Phe His
                645                 650                 655
Asn Leu Thr Gln Pro Arg Gly Val Asn Trp Cys Glu Arg Thr Thr Leu
            660                 665                 670
Ser Asn Gly Gly Cys Gln Tyr Leu Cys Leu Pro Ala Pro Gln Ile Asn
        675                 680                 685
Pro His Ser Pro Lys Phe Thr Cys Ala Cys Pro Asp Gly Met Leu Leu
    690                 695                 700
Ala Arg Gly His Glu Glu Leu Pro His Arg Gly Leu Arg Leu Gln Trp
705                 710                 715                 720
Pro Pro Arg Arg His Pro Pro Ser Gly  *
                725             729


     <210> 1256
     <211> 264
     <212> PRT
     <213> Homo sapiens


     <400> 1256
Met Arg Gly Asn Leu Ala Leu Val Gly Val Leu Ile Ser Leu Ala Phe
  1               5                  10                  15
Leu Ser Leu Leu Pro Ser Gly His Pro Gln Pro Ala Gly Asp Asp Ala
            20                  25                  30
Cys Ser Val Gln Ile Leu Val Pro Gly Leu Lys Gly Asp Ala Gly Glu
        35                  40                  45
Lys Gly Asp Lys Gly Ala Pro Gly Arg Pro Gly Arg Val Gly Pro Thr
    50                  55                  60
Gly Glu Lys Gly Asp Met Gly Asp Lys Gly Gln Lys Gly Ser Val Gly
```

```
65                  70                  75                  80
Arg His Gly Lys Ile Gly Pro Ile Gly Ser Lys Gly Glu Lys Gly Asp
                85                  90                  95
Ser Gly Asp Ile Gly Pro Pro Gly Pro Asn Gly Glu Pro Gly Leu Pro
            100                 105                 110
Cys Glu Cys Ser Gln Leu Arg Lys Ala Ile Gly Glu Met Asp Asn Gln
        115                 120                 125
Val Ser Gln Leu Thr Ser Glu Leu Lys Phe Ile Lys Asn Ala Val Ala
    130                 135                 140
Gly Val Arg Glu Thr Glu Ser Lys Ile Tyr Leu Leu Val Lys Glu Glu
145                 150                 155                 160
Lys Arg Tyr Ala Asp Ala Gln Leu Ser Cys Gln Gly Arg Gly Gly Thr
                165                 170                 175
Leu Ser Met Pro Lys Asp Glu Ala Ala Asn Gly Leu Met Ala Ala Tyr
            180                 185                 190
Leu Ala Gln Ala Gly Leu Ala Arg Val Phe Ile Gly Ile Asn Asp Leu
        195                 200                 205
Glu Lys Glu Gly Ala Phe Val Tyr Ser Asp His Ser Pro Met Arg Thr
    210                 215                 220
Phe Asn Lys Trp Arg Ser Gly Glu Pro Asn Asn Ala Tyr Asp Glu Glu
225                 230                 235                 240
Asp Cys Val Glu Met Val Ala Ser Gly Gly Trp Asn Asp Val Ala Cys
                245                 250                 255
His Thr Thr Met Tyr Phe Met  *
            260         263


      <210> 1257
      <211> 407
      <212> PRT
      <213> Homo sapiens


      <400> 1257
Met Ser Gly Ala Pro Thr Ala Gly Ala Ala Leu Met Leu Cys Ala Ala
 1               5                  10                  15
Thr Ala Val Leu Leu Ser Ala Gln Gly Gly Pro Val Gln Ser Lys Ser
            20                  25                  30
Pro Arg Phe Ala Ser Trp Asp Glu Met Asn Val Leu Ala His Gly Leu
        35                  40                  45
Leu Gln Leu Gly Gln Gly Leu Arg Glu His Ala Glu Arg Thr Arg Ser
    50                  55                  60
Gln Leu Ser Ala Leu Glu Arg Arg Leu Ser Ala Cys Gly Ser Ala Cys
65                  70                  75                  80
Gln Gly Thr Glu Gly Ser Thr Asp Leu Pro Leu Ala Pro Glu Ser Arg
                85                  90                  95
Val Asp Pro Glu Val Leu His Ser Leu Gln Thr Gln Leu Lys Ala Gln
            100                 105                 110
Asn Ser Arg Ile Gln Gln Leu Phe His Lys Val Ala Gln Gln Gln Arg
        115                 120                 125
His Leu Glu Lys Gln His Leu Arg Ile Gln His Leu Gln Ser Gln Phe
    130                 135                 140
Gly Leu Leu Asp His Lys His Leu Asp His Glu Val Ala Lys Pro Ala
145                 150                 155                 160
Arg Arg Lys Arg Leu Pro Glu Met Ala Gln Pro Val Asp Pro Ala His
                165                 170                 175
Asn Val Ser Arg Leu His Arg Leu Pro Arg Asp Cys Gln Glu Leu Phe
            180                 185                 190
```

```
Gln Val Gly Glu Arg Gln Ser Gly Leu Phe Glu Ile Gln Pro Gln Gly
        195                 200                 205
Ser Pro Pro Phe Leu Val Asn Cys Lys Met Thr Ser Asp Gly Gly Trp
    210                 215                 220
Thr Val Ile Gln Arg Arg His Asp Gly Ser Val Asp Phe Asn Arg Pro
225                 230                 235                 240
Trp Glu Ala Tyr Lys Ala Gly Phe Gly Asp Pro His Gly Glu Phe Trp
                245                 250                 255
Leu Gly Leu Glu Lys Val His Ser Ile Thr Gly Asp Arg Asn Ser Arg
            260                 265                 270
Leu Ala Val Gln Leu Arg Asp Trp Asp Gly Asn Ala Glu Leu Leu Gln
        275                 280                 285
Phe Ser Val His Leu Gly Gly Glu Asp Thr Ala Tyr Ser Leu Gln Leu
    290                 295                 300
Thr Ala Pro Val Ala Gly Gln Leu Gly Ala Thr Thr Val Pro Pro Ser
305                 310                 315                 320
Gly Leu Ser Val Pro Phe Ser Thr Trp Asp Gln Asp His Asp Leu Arg
                325                 330                 335
Arg Asp Lys Asn Cys Ala Lys Ser Leu Ser Gly Gly Trp Trp Phe Gly
            340                 345                 350
Thr Cys Ser His Ser Asn Leu Asn Gly Gln Tyr Phe Arg Ser Ile Pro
        355                 360                 365
Gln Gln Arg Gln Lys Leu Lys Lys Gly Ile Phe Trp Lys Thr Trp Arg
    370                 375                 380
Gly Arg Tyr Tyr Pro Leu Gln Ala Thr Thr Met Leu Ile Gln Pro Met
385                 390                 395                 400
Ala Ala Glu Ala Ala Ser  *
                405 406
```

<210> 1258
<211> 120
<212> PRT
<213> Homo sapiens

<400> 1258

```
Met Met Thr Pro Lys Leu Met Ile Trp Leu Leu Leu Gln Ala Lys Ser
 1               5                  10                  15
Ser Ile Ser Met Leu Glu Lys Ser Ser Lys Cys Leu Gly Arg Cys Phe
            20                  25                  30
Ser Ser Phe Ala Lys Asn Leu Val Met Ile Gln Ser Cys Val Ser Trp
        35                  40                  45
Ala Leu Met Ser Glu Asn Phe Tyr Arg Thr Leu Met Leu Cys Thr Thr
    50                  55                  60
Thr Leu Leu Pro Ser Thr Gln Glu Cys Val His Leu Pro Leu Gly Ala
65                  70                  75                  80
Leu Met Gln Lys Arg Ala Lys Asp Ser Phe Cys Thr Thr Thr Gln Arg
                85                  90                  95
Glu Lys Asp Phe Arg Ile Leu Ser Leu Glu Ser Ser Lys Gln Trp His
            100                 105                 110
Asn Lys Ser Met Ala Leu Lys  *
        115             119
```

<210> 1259
<211> 160

<212> PRT
<213> Homo sapiens

<400> 1259
Met Val Cys Leu Arg Leu Pro Gly Gly Ser Cys Met Ala Val Leu Thr
1   5   10   15
Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala Leu Ala Gly Asp Thr
            20   25   30
Arg Pro Arg Phe Leu Glu Tyr Ser Thr Gly Glu Cys Tyr Phe Phe Asn
        35   40   45
Gly Thr Glu Arg Val Arg Phe Leu Asp Arg Tyr Phe Tyr Asn Gln Glu
    50   55   60
Glu Tyr Val Arg Phe Asp Ser Asp Val Gly Glu Tyr Arg Ala Val Thr
65   70   75   80
Glu Leu Gly Arg Pro Asp Ala Glu Tyr Leu Glu Gln Pro Glu Gly Arg
                85   90   95
Pro Trp Asn Ser Gln Lys Asp Ile Leu Glu Asp Glu Arg Ala Ala Val
            100   105   110
Asp Thr Tyr Cys Arg His Asn Tyr Gly Val Val Glu Ser Phe Thr Val
        115   120   125
Gln Arg Arg Val His Pro Lys Val Thr Val Tyr Pro Ser Lys Thr Gln
    130   135   140
Pro Leu Gln Ala Pro Gln Pro Ala Val Leu Phe Cys Glu Trp Phe *
145   150   155   159

<210> 1260
<211> 111
<212> PRT
<213> Homo sapiens

<400> 1260
Met Leu Thr Phe Leu Met Leu Val Arg Leu Ser Thr Leu Cys Pro Ser
1   5   10   15
Ala Val Leu Gln Arg Leu Asp Arg Leu Val Glu Pro Leu Arg Ala Thr
            20   25   30
Cys Thr Thr Lys Val Lys Ala Asn Ser Val Lys Gln Glu Phe Glu Lys
        35   40   45
Gln Asp Glu Leu Lys Arg Ser Ala Met Arg Ala Val Ala Ala Leu Leu
    50   55   60
Thr Ile Pro Glu Ala Glu Lys Ser Pro Leu Met Ser Glu Phe Gln Ser
65   70   75   80
Gln Ile Ser Ser Asn Pro Glu Leu Ala Ala Ile Phe Glu Ser Ile Gln
                85   90   95
Lys Asp Ser Ser Ser Thr Asn Leu Glu Ser Met Asp Thr Ser *
            100   105   110

<210> 1261
<211> 123
<212> PRT
<213> Homo sapiens

<400> 1261

Met Ile Pro Ala Arg Phe Ala Gly Val Leu Leu Ala Leu Ala Leu Ile
1 5 10 15
Leu Pro Gly Thr Leu Cys Ala Glu Gly Thr Arg Gly Arg Ser Ser Thr
20 25 30
Ala Arg Cys Ser Leu Phe Gly Ser Asp Phe Val Asn Thr Phe Asp Gly
35 40 45
Ser Met Tyr Ser Phe Ala Gly Tyr Cys Ser Tyr Leu Leu Ala Gly Gly
50 55 60
Cys Gln Lys Arg Ser Phe Ser Ile Ile Gly Asp Phe Gln Asn Gly Lys
65 70 75 80
Arg Val Ser Leu Ser Val Tyr Leu Gly Glu Phe Phe Asp Ile His Leu
85 90 95
Phe Val Asn Gly Thr Val Thr Gln Gly Asp Gln Arg Val Ser Met Pro
100 105 110
Tyr Ala Ser Lys Gly Leu Tyr Leu Glu Thr *
115 120 122

<210> 1262
<211> 737
<212> PRT
<213> Homo sapiens

<400> 1262
Met Phe Pro Ala Gly Pro Pro Trp Pro Arg Val Arg Val Val Gln Val
1 5 10 15
Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser Trp Arg Leu Trp Ala
20 25 30
Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val Val Leu Asn Glu Phe
35 40 45
Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser Phe Phe Glu Gln Glu
50 55 60
Pro Val Asp Thr Val Ser Ser Leu Phe His Met Leu Val Asp Ser Pro
65 70 75 80
Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro Tyr Tyr Leu Lys Ile
85 90 95
Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp Leu Val Arg Met Gly
100 105 110
His Leu Thr Gly Leu Lys Pro Leu Val Leu Val Thr Phe Gln Ser Pro
115 120 125
Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu Gln Ile Gln Met Glu
130 135 140
Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly Gly Gly Gly Arg Asp
145 150 155 160
Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe Leu Lys Arg Asp Arg
165 170 175
Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu Leu Phe Asn Leu Met
180 185 190
Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro Leu Trp His Thr Val
195 200 205
Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile Pro Asn Glu Lys Tyr
210 215 220
Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe Ser Leu Val Glu Val
225 230 235 240
Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser Cys Trp Val Gly Ser
245 250 255
Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr Ile Tyr Asp Thr Ile

260 265 270
Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn Gln Leu Val Tyr Tyr
275 280 285
Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg Asn Arg Gly Ser Gly
290 295 300
Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu Gly Thr Leu Val Asn
305 310 315 320
Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu Ala Ser Glu Cys Ile
325 330 335
Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn Gly Ser Glu Tyr Ile
340 345 350
Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr Val His Phe Gly Thr
355 360 365
Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser Glu Tyr Ile Ala Gly
370 375 380
Glu Tyr Thr Leu Leu Leu Leu Val Glu Ser Gly Tyr Gly Asn Ala Ser
385 390 395 400
Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala Ser Asp Asp Leu Glu
405 410 415
Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu Ala Arg Gly Leu Glu
420 425 430
Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr Ser Thr Ala Met Ala
435 440 445
Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn Leu Ile Phe Ile Trp
450 455 460
Gly Asn Phe Leu Leu Gln Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu
465 470 475 480
Ala Asp Phe Pro Lys Glu Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe
485 490 495
Arg Gly Ala Val Ala Ile Val Thr Glu Thr Glu Glu Ile Trp Tyr Leu
500 505 510
Leu Glu Gly Ser Tyr Arg Val Tyr Gln Leu Phe Pro Ser Lys Gly Trp
515 520 525
Gln Val His Ile Ser Leu Lys Leu Met Gln Gln Ser Ser Leu Tyr Ala
530 535 540
Ser Asn Glu Thr Met Leu Thr Leu Phe Tyr Glu Asp Ser Lys Leu Tyr
545 550 555 560
Gln Leu Val Tyr Leu Met Asn Asn Gln Lys Gly Gln Leu Val Lys Arg
565 570 575
Leu Val Pro Val Glu Gln Leu Leu Met Tyr Gln Gln His Thr Ser His
580 585 590
Tyr Asp Leu Glu Arg Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp
595 600 605
Phe Cys Pro Phe Ser Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln
610 615 620
Arg Tyr Thr Arg Gln Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu
625 630 635 640
Glu Arg Ser Gly Phe Pro Gln Gly Glu Leu Ala Arg His Leu Pro Gly
645 650 655
Pro Gly Leu Leu Pro Ala Val Ala Ala Leu Arg Val Arg Gln Ala Val
660 665 670
Arg Gly Pro Gly Ala Arg Pro His Leu Ala Leu Val Gly Glu Gln Gln
675 680 685
Thr Arg Pro Gly Leu Leu Leu Leu Leu Gly Glu Gln Leu Ala Lys Arg
690 695 700
Gly Arg Arg Val His Arg Asn Gly Gln Leu Arg Lys Asp Leu Gln Pro
705 710 715 720
Arg Val Arg Val Arg Ala Ala Gly Ala His Phe Pro Gly Gln Gly His
725 730 735 736

*

<210> 1263
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1263
Met Gly Ala Gly Cys Thr Pro Val Val Leu Gly Ala Ala Leu Trp Leu
1 5 10 15
Trp Arg Trp Phe Ser Arg Trp Gly Leu Gly Gly Leu Cys Trp Arg Pro
20 25 30
Cys Thr Cys Thr Pro Cys His Ser Ala Ser Pro Gly Ala Gly Arg *
35 40 45 47

<210> 1264
<211> 61
<212> PRT
<213> Homo sapiens

<400> 1264
Met Met Tyr Ile Leu Phe Leu Gln Ala Phe Ile Leu Asp Tyr Tyr Gln
1 5 10 15
Tyr Phe Leu Gly Leu Asn Cys Val Tyr Ser Tyr Gln Ser Lys Lys Asp
20 25 30
Phe Ser Gln Ile Trp Ser Gln Gly Trp Phe Ala Leu Leu Trp Ile Leu
35 40 45
Cys Leu Ser Arg Ile Leu Glu Ser Phe Phe Phe Leu *
50 55 60

<210> 1265
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1265
Met Val Gly Phe Leu Cys Cys Phe Tyr Leu Phe Gln Leu Leu Gly Pro
1 5 10 15
Gly Leu Leu Cys Leu Pro Lys Ala Val Leu Ser Phe Leu Gly Leu Leu
20 25 30
Glu Ala Ala His His Leu Leu Val Lys Gly Phe Leu Leu Pro Val Leu
35 40 45
Asp Leu Pro Gln Val Ile Val His Gln *
50 55 57

<210> 1266
<211> 148

<212> PRT
<213> Homo sapiens

<400> 1266
Met Ala Leu Gln Leu Trp Ala Leu Thr Leu Leu Gly Leu Leu Gly Ala
1 5 10 15
Gly Ala Ser Leu Arg Pro Arg Lys Leu Asp Phe Phe Arg Ser Glu Lys
20 25 30
Glu Leu Asn His Leu Ala Val Asp Glu Ala Ser Gly Val Val Tyr Leu
35 40 45
Gly Ala Val Asn Ala Leu Tyr Gln Leu Asp Ala Lys Leu Gln Leu Glu
50 55 60
Gln Gln Val Ala Thr Gly Pro Val Leu Asp Asn Lys Lys Cys Thr Pro
65 70 75 80
Pro Ile Glu Ala Ser Gln Cys His Glu Ala Glu Met Thr Asp Asn Val
85 90 95
Asn Gln Leu Leu Leu Val Asp Pro Pro Arg Lys Arg Leu Val Glu Cys
100 105 110
Gly Gln Leu Leu Lys Gly Ile Leu Arg Ser Ala Arg Pro Glu Gln His
115 120 125
Leu Pro Pro Pro Val Leu Arg Gly Arg Gln Arg Gly Glu Val Phe Arg
130 135 140
Gly Gln Gln *
145 147

<210> 1267
<211> 227
<212> PRT
<213> Homo sapiens

<400> 1267
Met Arg Trp Leu Trp Pro Leu Ala Val Ser Leu Ala Val Ile Leu Ala
1 5 10 15
Val Gly Leu Ser Arg Val Ser Gly Gly Ala Pro Leu His Leu Gly Arg
20 25 30
His Arg Ala Glu Thr Gln Glu Gln Gln Ser Arg Ser Lys Arg Gly Thr
35 40 45
Glu Asp Glu Glu Ala Lys Gly Val Gln Gln Tyr Val Pro Glu Glu Trp
50 55 60
Ala Glu Tyr Pro Arg Pro Ile His Pro Ala Gly Leu Gln Pro Thr Lys
65 70 75 80
Pro Leu Val Ala Thr Ser Pro Asn Pro Asp Lys Asp Gly Gly Thr Pro
85 90 95
Asp Ser Gly Gln Glu Leu Arg Gly Asn Leu Thr Gly Ala Pro Gly Gln
100 105 110
Arg Leu Gln Ile Gln Asn Pro Leu Tyr Pro Val Thr Glu Ser Ser Tyr
115 120 125
Ser Ala Tyr Ala Ile Met Leu Leu Ala Leu Val Glu Phe Ala Ala Gly
130 135 140
Ile Val Gly Asn Leu Ser Val Met Cys Ile Ala Trp His Ser Tyr Tyr
145 150 155 160
Leu Lys Ser Ala Trp Asn Ser Ile Leu Ala Ser Leu Ala Leu Trp Asp
165 170 175
Phe Leu Val Leu Phe Phe Cys Leu Pro Ile Val Ile Leu Asn Glu Ile
180 185 190

Thr Lys Gln Arg Leu Leu Gly Asp Ala Pro Cys Pro Cys Arg Ala Leu
195 200 205
His Gly Gly Leu Leu Ser Gly Ser His Asp Phe Gln Pro Leu Cys Pro
210 215 220
Gly His *
225 226

<210> 1268
<211> 983
<212> PRT
<213> Homo sapiens

<400> 1268
Met Leu Gly Asn Val Leu Leu Leu Cys Phe Phe Val Phe Phe Ile Phe
1 5 10 15
Gly Ile Val Gly Val Gln Leu Trp Ala Gly Leu Leu Arg Asn Arg Cys
20 25 30
Phe Leu Pro Glu Asn Phe Ser Leu Pro Leu Ser Val Asp Leu Glu Arg
35 40 45
Tyr Tyr Gln Thr Glu Asn Glu Asp Glu Ser Pro Phe Ile Cys Ser Gln
50 55 60
Pro Arg Glu Asn Gly Met Arg Ser Cys Arg Ser Val Pro Thr Leu Arg
65 70 75 80
Gly Asp Gly Gly Gly Gly Pro Pro Cys Gly Leu Asp Tyr Glu Ala Tyr
85 90 95
Asn Ser Ser Ser Asn Thr Thr Cys Val Asn Trp Asn Gln Tyr Tyr Thr
100 105 110
Asn Cys Ser Ala Gly Glu His Asn Pro Phe Lys Gly Ala Ile Asn Phe
115 120 125
Asp Asn Ile Gly Tyr Ala Trp Ile Ala Ile Phe Gln Val Ile Thr Leu
130 135 140
Glu Gly Trp Val Asp Ile Met Tyr Phe Val Met Asp Ala His Ser Phe
145 150 155 160
Tyr Asn Phe Ile Tyr Phe Ile Leu Leu Ile Ile Val Gly Ser Phe Phe
165 170 175
Met Ile Asn Leu Cys Leu Val Val Ile Ala Thr Gln Phe Ser Glu Thr
180 185 190
Lys Gln Arg Glu Ser Gln Leu Met Arg Glu Gln Arg Val Arg Phe Leu
195 200 205
Ser Asn Ala Ser Thr Leu Ala Ser Phe Ser Glu Pro Gly Ser Cys Tyr
210 215 220
Glu Glu Leu Leu Lys Tyr Leu Val Tyr Ile Leu Arg Lys Ala Ala Arg
225 230 235 240
Arg Leu Ala Gln Val Ser Arg Ala Ala Gly Val Arg Val Gly Leu Leu
245 250 255
Ser Ser Pro Ala Pro Leu Gly Gly Gln Glu Thr Gln Pro Ser Ser Ser
260 265 270
Cys Ser Arg Ser His Arg Arg Leu Ser Val His His Leu Val His His
275 280 285
His His His His His His His Tyr His Leu Gly Asn Gly Thr Leu Arg
290 295 300
Ala Pro Arg Ala Ser Pro Glu Ile Gln Asp Arg Asp Ala Asn Gly Ser
305 310 315 320
Arg Arg Leu Met Leu Pro Pro Pro Ser Thr Pro Ala Leu Ser Gly Ala
325 330 335
Pro Pro Gly Gly Ala Glu Ser Val His Ser Phe Tyr His Ala Asp Cys

340 345 350
His Leu Glu Pro Val Arg Cys Gln Ala Pro Pro Pro Arg Ser Pro Ser
355 360 365
Glu Ala Ser Gly Arg Thr Val Gly Ser Gly Lys Val Tyr Pro Thr Val
370 375 380
His Thr Ser Pro Pro Pro Glu Thr Leu Lys Glu Lys Ala Leu Val Glu
385 390 395 400
Val Ala Ala Ser Ser Gly Pro Pro Thr Leu Thr Ser Leu Asn Ile Pro
405 410 415
Pro Gly Pro Tyr Ser Ser Met His Lys Leu Leu Glu Thr Gln Ser Thr
420 425 430
Gly Ala Cys Gln Ser Ser Cys Lys Ile Ser Ser Pro Cys Leu Lys Ala
435 440 445
Asp Ser Gly Ala Cys Gly Pro Asp Ser Cys Pro Tyr Cys Ala Arg Ala
450 455 460
Gly Ala Gly Glu Val Glu Leu Ala Asp Arg Glu Met Pro Asp Ser Asp
465 470 475 480
Ser Glu Ala Val Tyr Glu Phe Thr Gln Asp Ala Gln His Ser Asp Leu
485 490 495
Arg Asp Pro His Ser Arg Arg Gln Arg Ser Leu Gly Pro Asp Ala Glu
500 505 510
Pro Ser Ser Val Leu Ala Phe Trp Arg Leu Ile Cys Asp Thr Phe Arg
515 520 525
Lys Ile Val Asp Ser Lys Tyr Phe Gly Arg Gly Ile Met Ile Ala Ile
530 535 540
Leu Val Asn Thr Leu Ser Met Gly Ile Glu Tyr His Glu Gln Pro Glu
545 550 555 560
Glu Leu Thr Asn Ala Leu Glu Ile Ser Asn Ile Val Phe Thr Ser Leu
565 570 575
Phe Ala Leu Glu Met Leu Leu Lys Leu Leu Val Tyr Gly Pro Phe Gly
580 585 590
Tyr Ile Lys Asn Pro Tyr Asn Ile Phe Asp Gly Val Ile Val Val Ile
595 600 605
Ser Val Trp Glu Ile Val Gly Gln Gln Gly Gly Gly Leu Ser Val Leu
610 615 620
Arg Thr Phe Arg Leu Met Arg Val Leu Lys Leu Val Arg Phe Leu Pro
625 630 635 640
Ala Leu Gln Arg Gln Leu Val Val Leu Met Lys Thr Met Asp Asn Val
645 650 655
Ala Thr Phe Cys Met Leu Leu Met Leu Phe Ile Phe Ile Phe Ser Ile
660 665 670
Leu Gly Met His Leu Phe Gly Cys Lys Phe Ala Ser Glu Arg Asp Gly
675 680 685
Asp Thr Leu Pro Asp Arg Lys Asn Phe Asp Ser Leu Leu Trp Ala Ile
690 695 700
Val Thr Val Phe Gln Ile Leu Thr Gln Glu Asp Trp Asn Lys Val Leu
705 710 715 720
Tyr Asn Gly Met Ala Ser Thr Ser Ser Trp Ala Ala Leu Tyr Phe Ile
725 730 735
Ala Leu Met Thr Phe Gly Asn Tyr Val Leu Phe Asn Leu Leu Val Ala
740 745 750
Ile Leu Val Glu Gly Phe Gln Ala Glu Gly Asp Ala Asn Lys Ser Glu
755 760 765
Ser Glu Pro Asp Phe Phe Ser Pro Ser Leu Asp Gly Asp Gly Asp Arg
770 775 780
Lys Lys Cys Leu Ala Leu Val Ser Leu Gly Glu His Pro Glu Leu Arg
785 790 795 800
Lys Ser Leu Leu Pro Pro Leu Ile Ile His Thr Ala Ala Thr Pro Met
805 810 815

Ser Leu Pro Lys Ser Thr Ser Thr Gly Leu Gly Glu Ala Leu Gly Pro
820 825 830
Ala Ser Arg Arg Thr Ser Ser Ser Gly Ser Ala Glu Pro Gly Ala Ala
835 840 845
His Glu Met Lys Ser Pro Pro Ser Ala Arg Ser Ser Pro His Ser Pro
850 855 860
Trp Ser Ala Ala Ser Ser Trp Thr Ser Arg Arg Ser Ser Arg Asn Ser
865 870 875 880
Leu Gly Arg Ala Pro Ser Leu Lys Arg Arg Ser Pro Ser Gly Glu Arg
885 890 895
Arg Ser Leu Leu Ser Gly Glu Gly Gln Glu Ser Gln Asp Glu Glu Glu
900 905 910
Ser Ser Glu Glu Glu Arg Ala Ser Pro Ala Gly Ser Asp His Arg His
915 920 925
Arg Gly Ser Leu Glu Arg Glu Ala Lys Ser Ser Phe Asp Leu Pro Asp
930 935 940
Thr Leu Gln Val Pro Gly Leu His Arg Thr Ala Ser Gly Arg Gly Ser
945 950 955 960
Ala Ser Glu His Gln Gly Leu Gln Trp Gln Val Gly Phe Arg Ala Pro
965 970 975
Gly Pro Gly Pro Ala Ala *
980 982

<210> 1269
<211> 708
<212> PRT
<213> Homo sapiens

<400> 1269
Met Leu Ser Leu Arg Arg Cys Thr Ser Met Arg Leu Cys Leu Ser Ser
1 5 10 15
Ser Leu Ala Ser Pro Cys Ser Thr Met Leu Ser Thr Val Val Leu Tyr
20 25 30
Lys Val Cys Asn Ser Phe Val Glu Met Gly Ser Ala Asn Val Gln Ala
35 40 45
Thr Asp Tyr Leu Lys Gly Val Ala Ser Leu Phe Val Val Ser Leu Gly
50 55 60
Gly Ala Ala Val Gly Leu Val Phe Ala Phe Leu Leu Ala Leu Thr Thr
65 70 75 80
Arg Phe Thr Lys Arg Val Arg Ile Ile Glu Pro Leu Leu Val Phe Leu
85 90 95
Leu Ala Tyr Ala Ala Tyr Leu Thr Ala Glu Met Ala Ser Leu Ser Ala
100 105 110
Ile Leu Ala Val Thr Met Cys Gly Leu Gly Cys Lys Lys Tyr Val Glu
115 120 125
Ala Asn Ile Ser His Lys Ser Arg Thr Thr Val Lys Tyr Thr Met Lys
130 135 140
Thr Leu Ala Ser Cys Ala Glu Thr Val Ile Phe Met Leu Leu Gly Ile
145 150 155 160
Ser Thr Val Asp Ser Ser Lys Trp Ala Trp Asp Ser Gly Leu Val Leu
165 170 175
Gly Thr Leu Ile Phe Ile Leu Phe Phe Arg Ala Leu Gly Val Val Leu
180 185 190
Gln Thr Trp Val Leu Asn Gln Phe Arg Leu Val Pro Leu Asp Lys Ile
195 200 205
Asp Gln Val Val Met Ser Tyr Gly Gly Leu Arg Gly Ala Val Ala Phe

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    210                 215                 220
Ala Leu Val Ile Leu Leu Asp Arg Thr Lys Val Pro Ala Lys Asp Tyr
225                 230                 235                 240
Phe Val Ala Thr Thr Ile Val Val Val Phe Phe Thr Val Ile Val Gln
                245                 250                 255
Gly Leu Thr Ile Lys Pro Leu Val Lys Trp Leu Lys Val Lys Arg Ser
            260                 265                 270
Glu His His Lys Pro Thr Leu Asn Gln Glu Leu His Glu His Thr Phe
        275                 280                 285
Asp His Ile Leu Ala Ala Val Glu Asp Val Val Gly His His Gly Tyr
    290                 295                 300
His Tyr Trp Arg Asp Arg Trp Glu Gln Phe Asp Lys Lys Tyr Leu Ser
305                 310                 315                 320
Gln Leu Leu Met Arg Arg Ser Ala Tyr Arg Ile Arg Asp Gln Ile Trp
                325                 330                 335
Asp Val Tyr Tyr Arg Leu Asn Ile Arg Asp Ala Ile Ser Phe Val Asp
            340                 345                 350
Gln Gly Gly His Val Leu Ser Ser Thr Gly Leu Thr Leu Pro Ser Met
        355                 360                 365
Pro Ser Arg Asn Ser Val Ala Glu Thr Ser Val Thr Asn Leu Leu Arg
    370                 375                 380
Glu Ser Gly Ser Gly Ala Cys Leu Asp Leu Gln Val Ile Asp Thr Val
385                 390                 395                 400
Arg Ser Gly Arg Asp Arg Glu Asp Ala Val Met His His Leu Leu Cys
                405                 410                 415
Gly Gly Leu Tyr Lys Pro Arg Arg Arg Tyr Lys Ala Ser Cys Ser Arg
            420                 425                 430
His Phe Ile Ser Glu Asp Ala Gln Glu Arg Gln Asp Lys Glu Val Phe
        435                 440                 445
Gln Gln Asn Met Lys Arg Arg Leu Glu Ser Phe Lys Ser Thr Lys His
    450                 455                 460
Asn Ile Cys Phe Thr Lys Ser Lys Pro Arg Pro Arg Lys Thr Gly Arg
465                 470                 475                 480
Arg Lys Lys Asp Gly Val Ala Asn Ala Glu Ala Thr Asn Gly Lys His
                485                 490                 495
Arg Gly Leu Gly Phe Gln Asp Thr Ala Ala Val Ile Leu Thr Val Glu
            500                 505                 510
Ser Glu Glu Glu Glu Glu Glu Ser Asp Ser Ser Glu Thr Glu Lys Glu
        515                 520                 525
Asp Asp Glu Gly Ile Ile Phe Val Ala Arg Ala Thr Ser Glu Val Leu
    530                 535                 540
Gln Glu Gly Lys Val Ser Gly Ser Leu Glu Val Cys Pro Ser Pro Arg
545                 550                 555                 560
Ile Ile Pro Pro Ser Pro Thr Cys Ala Glu Lys Glu Leu Pro Trp Lys
                565                 570                 575
Ser Gly Gln Gly Asp Leu Ala Val Tyr Val Ser Ser Glu Thr Thr Lys
            580                 585                 590
Ile Val Pro Val Asp Met Gln Thr Gly Trp Asn Gln Ser Ile Ser Ser
        595                 600                 605
Leu Glu Ser Leu Ala Ser Pro Pro Cys Asn Gln Ala Pro Ile Leu Thr
    610                 615                 620
Cys Leu Pro Pro His Pro Arg Gly Thr Glu Glu Pro Gln Val Pro Leu
625                 630                 635                 640
His Leu Pro Ser Asp Pro Arg Ser Ser Phe Ala Phe Pro Pro Ser Leu
                645                 650                 655
Ala Lys Ala Gly Arg Ser Arg Ser Glu Ser Ser Ala Asp Leu Pro Gln
            660                 665                 670
Gln Gln Glu Leu Gln Pro Leu Met Gly His Lys Asp His Thr His Leu
        675                 680                 685
```

Ser Pro Gly Thr Ala Thr Ser His Trp Cys Ile Gln Phe Asn Arg Gly
690 695 700
Ser Arg Leu *
705 707

<210> 1270
<211> 93
<212> PRT
<213> Homo sapiens

<400> 1270
Met Leu Gln Ala Ala Leu Trp Cys Gly Ile Gly Leu Tyr Leu Val Thr
1 5 10 15
Leu Arg Leu Gly Val Glu Val Thr Pro Glu Ser Gln His Phe Gly Arg
20 25 30
Pro Arg Arg Ala Asp His Leu Arg Pro Gly Gly Arg Gly Gln Ser Gly
35 40 45
Gln His Gly Glu Thr Pro Ser Leu Leu Glu Ile Gln Lys Ile Ser Trp
50 55 60
Met Trp Trp His Ile Pro Val Ile Pro Ala Thr Trp Glu Ala Glu Ala
65 70 75 80
Gly Glu Ser Leu Glu Arg Gly Arg Trp Arg Leu Gln *
85 90 92

<210> 1271
<211> 648
<212> PRT
<213> Homo sapiens

<400> 1271
Met Leu Trp Val Thr Gly Pro Val Leu Ala Val Ile Leu Ile Ile Leu
1 5 10 15
Ile Val Ile Ala Ile Leu Leu Phe Lys Arg Lys Arg Thr His Ser Pro
20 25 30
Ser Ser Lys Asp Glu Gln Ser Ile Gly Leu Lys Asp Ser Leu Leu Ala
35 40 45
His Ser Ser Asp Pro Val Glu Met Arg Arg Leu Asn Tyr Gln Thr Pro
50 55 60
Gly Met Arg Asp His Pro Pro Ile Pro Ile Thr Asp Leu Ala Asp Asn
65 70 75 80
Ile Glu Arg Leu Lys Ala Asn Asp Gly Leu Lys Phe Ser Gln Glu Tyr
85 90 95
Glu Ser Ile Asp Pro Gly Gln Gln Phe Thr Trp Glu Asn Ser Asn Leu
100 105 110
Glu Val Asn Lys Pro Lys Asn Arg Tyr Ala Asn Val Ile Ala Tyr Asp
115 120 125
His Ser Arg Val Ile Leu Thr Ser Ile Asp Gly Val Pro Gly Ser Asp
130 135 140
Tyr Ile Asn Ala Asn Tyr Ile Asp Gly Tyr Arg Lys Gln Asn Ala Tyr
145 150 155 160
Ile Ala Thr Gln Gly Pro Leu Pro Glu Thr Met Gly Asp Phe Trp Arg
165 170 175
Met Val Trp Glu Gln Arg Thr Ala Thr Val Val Met Met Thr Arg Leu

180 185 190
Glu Glu Lys Ser Arg Val Lys Cys Asp Gln Tyr Trp Pro Ala Arg Gly
195 200 205
Thr Glu Thr Cys Gly Leu Ile Gln Val Thr Leu Leu Asp Thr Val Glu
210 215 220
Leu Ala Thr Tyr Thr Val Arg Thr Phe Ala Leu His Lys Ser Gly Ser
225 230 235 240
Ser Glu Lys Arg Glu Leu Arg Gln Phe Gln Phe Met Ala Trp Pro Asp
245 250 255
His Gly Val Pro Glu Tyr Pro Thr Pro Ile Leu Ala Phe Leu Arg Arg
260 265 270
Val Lys Ala Cys Asn Pro Leu Asp Ala Gly Pro Met Val Val His Cys
275 280 285
Ser Ala Gly Val Gly Arg Thr Gly Cys Phe Ile Val Ile Asp Ala Met
290 295 300
Leu Glu Arg Met Lys His Glu Lys Thr Val Asp Ile Tyr Gly His Val
305 310 315 320
Thr Cys Met Arg Ser Gln Arg Asn Tyr Met Val Gln Thr Glu Asp Gln
325 330 335
Tyr Val Phe Ile His Glu Ala Leu Leu Glu Ala Ala Thr Cys Gly His
340 345 350
Thr Glu Val Pro Ala Arg Asn Leu Tyr Ala His Ile Gln Lys Leu Gly
355 360 365
Gln Val Pro Pro Gly Glu Ser Val Thr Ala Met Glu Leu Glu Phe Lys
370 375 380
Leu Leu Ala Ser Ser Lys Ala His Thr Ser Arg Phe Ile Ser Ala Asn
385 390 395 400
Leu Pro Cys Asn Lys Phe Lys Asn Arg Leu Val Asn Ile Met Pro Tyr
405 410 415
Glu Leu Thr Arg Val Cys Leu Gln Pro Ile Arg Gly Val Glu Gly Ser
420 425 430
Asp Tyr Ile Asn Ala Ser Phe Leu Asp Gly Tyr Arg Gln Gln Lys Ala
435 440 445
Tyr Ile Ala Thr Gln Gly Pro Leu Ala Glu Ser Thr Glu Asp Phe Trp
450 455 460
Arg Met Leu Trp Glu His Asn Ser Thr Ile Ile Val Met Leu Thr Lys
465 470 475 480
Leu Arg Glu Met Gly Arg Glu Lys Cys His Gln Tyr Trp Pro Ala Glu
485 490 495
Arg Ser Ala Arg Tyr Gln Tyr Phe Val Val Asp Pro Met Ala Glu Tyr
500 505 510
Asn Met Pro Gln Tyr Ile Leu Arg Glu Phe Lys Val Thr Asp Ala Arg
515 520 525
Asp Gly Gln Ser Arg Thr Ile Arg Gln Phe Gln Phe Thr Asp Trp Pro
530 535 540
Glu Gln Gly Val Pro Lys Thr Gly Glu Gly Phe Ile Asp Phe Ile Gly
545 550 555 560
Gln Val His Lys Thr Lys Glu Gln Phe Gly Gln Asp Gly Pro Ile Thr
565 570 575
Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Val Phe Ile Thr Leu
580 585 590
Ser Ile Val Leu Glu Arg Met Arg Tyr Glu Gly Val Val Asp Met Phe
595 600 605
Gln Thr Val Lys Thr Leu Arg Thr Gln Arg Pro Ala Met Val Gln Thr
610 615 620
Glu Asp Gln Tyr Gln Leu Cys Tyr Arg Ala Ala Leu Glu Tyr Leu Gly
625 630 635 640
Ser Phe Asp His Tyr Ala Thr *
645 647

<210> 1272
<211> 109
<212> PRT
<213> Homo sapiens

<400> 1272
Met Lys Ala Leu Cys Leu Leu Leu Leu Pro Val Leu Gly Leu Leu Val
1 5 10 15
Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
20 25 30
Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
35 40 45
Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
50 55 60
Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
65 70 75 80
Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met
85 90 95
Asp Trp Thr Gly Ala Arg Cys Cys Arg Val Gln Pro *
100 105 108

<210> 1273
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1273
Met Phe Phe Val Pro Ile Leu Leu Cys Leu Leu Leu Leu Ile Tyr Asn
1 5 10 15
Ile Ile Cys Phe Asn Met Glu His Pro Thr Gly Ala Gly Leu Arg Cys
20 25 30
Ser Leu Leu Ala Ala Pro Lys Glu Arg Gln His Arg His His Phe Val
35 40 45
Phe His Ile Asp Thr Asn His *
50 55

<210> 1274
<211> 188
<212> PRT
<213> Homo sapiens

<400> 1274
Met Asp Leu Ser Leu Leu Trp Val Leu Leu Pro Leu Val Thr Met Ala
1 5 10 15
Trp Gly Gln Tyr Gly Asp Tyr Gly Tyr Pro Tyr Gln Gln Tyr His Asp
20 25 30
Tyr Ser Asp Asp Gly Trp Val Asn Leu Asn Arg Gln Gly Phe Ser Tyr
35 40 45
Gln Cys Pro Gln Gly Gln Val Ile Val Ala Val Arg Ser Ile Phe Ser

```
    50                  55                  60
Lys Lys Glu Gly Ser Asp Arg Gln Trp Asn Tyr Ala Cys Met Pro Thr
65                  70                  75                  80
Pro Gln Ser Leu Gly Glu Pro Thr Glu Cys Trp Trp Glu Glu Ile Asn
                85                  90                  95
Arg Ala Gly Met Glu Trp Tyr Gln Thr Cys Ser Asn Asn Gly Leu Val
            100                 105                 110
Ala Gly Phe Gln Ser Arg Tyr Phe Glu Ser Val Leu Asp Arg Glu Trp
        115                 120                 125
Gln Phe Tyr Cys Cys Arg Tyr Ser Lys Arg Cys Pro Tyr Ser Cys Trp
    130                 135                 140
Leu Thr Thr Glu Tyr Pro Gly His Tyr Gly Glu Glu Met Asp Met Ile
145                 150                 155                 160
Ser Tyr Asn Tyr Asp Tyr Tyr Ile Arg Gly Ala Thr Thr His Phe Leu
                165                 170                 175
Cys Ser Gly Lys Gly Ser Pro Ser Gly Ser Ser  *
            180                 185     187
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<210> 1275
<211> 81
<212> PRT
<213> Homo sapiens

<400> 1275

```
Met Val Ala Leu Thr Ile Gln Thr Trp His Trp Leu Met Thr Val Ala
 1               5                  10                  15
Glu Leu Leu Ser Leu Ala Cys Tyr Ile Ala Ser Leu Val Phe Leu His
            20                  25                  30
Glu Phe Ile Asp Val Tyr Phe Ile Ala Thr Leu Ser Phe Leu Trp Lys
        35                  40                  45
Val Ser Val Ile Thr Leu Val Ser Cys Leu Pro Leu Tyr Val Leu Lys
    50                  55                  60
Tyr Leu Arg Arg Arg Phe Ser Pro Pro Ser Tyr Ser Lys Leu Thr Ser
65                  70                  75                  80
*
```

<210> 1276
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1276

```
Met Leu Asp Leu Val Ala Leu Leu Tyr Gln Ala Val Leu Leu Pro Ala
 1               5                  10                  15
Ile Leu Leu Leu Pro Leu Cys Gln Leu Glu Met Phe Leu Met Leu Gln
            20                  25                  30
Leu Asn Arg Gln Ser Leu Lys Lys Lys Tyr Leu Ile Leu  *
        35                  40                  45
```

<210> 1277

<211> 431
<212> PRT
<213> Homo sapiens

<400> 1277
Met Ala Leu Leu Val Pro Leu Ala Leu Leu Val Ile Gln Ala His Leu
1 5 10 15
Val Leu Ser Val Gln Leu Glu Arg Val Val Thr Glu Glu Lys Val Ala
20 25 30
Leu Leu Ala Leu Leu Val Leu Pro Val Leu Leu Val Pro Glu Val Leu
35 40 45
Leu Val Leu Lys Ala His Val Val Thr Lys Val Lys Gln Val Asn Val
50 55 60
Glu Leu Leu Ala Ser Lys Asp Ile Glu Asp Ser Leu Val Ile Gln Val
65 70 75 80
Pro Gln Val Leu Gln Ala Leu Leu Val Ser Arg Val Gln Ser Ala Val
85 90 95
Gln Asp Leu Gln Ala Pro Glu Asp Leu Leu Asp Pro Val Asp Leu Leu
100 105 110
Ala Lys Met Glu Pro Val Asp Ile Gln Val Pro Leu Asp His Gln Gly
115 120 125
Leu Glu Val Thr Glu Val Lys Glu Asp Leu Arg Ala Pro Gln Ala Thr
130 135 140
Gln Gly Asn Gln Ala Leu Leu Asp Leu Leu Val Pro Leu Val Leu Ala
145 150 155 160
Val Val Val Leu Glu Pro Leu Pro Leu Leu Gly Leu Glu Val Lys Lys
165 170 175
Leu Ala Gly Phe Ala Pro Tyr Tyr Gly Asp Glu Pro Met Asp Phe Lys
180 185 190
Ile Asn Thr Asp Glu Ile Met Thr Ser Leu Lys Ser Val Asn Gly Gln
195 200 205
Ile Glu Ser Leu Ile Ser Pro Asp Gly Ser Arg Lys Asn Pro Ala Arg
210 215 220
Asn Cys Arg Asp Leu Lys Phe Cys His Pro Glu Leu Lys Ser Gly Glu
225 230 235 240
Tyr Trp Val Asp Pro Asn Gln Gly Cys Lys Leu Asp Ala Ile Lys Val
245 250 255
Phe Cys Asn Met Glu Thr Gly Glu Thr Cys Ile Ser Ala Asn Pro Leu
260 265 270
Asn Val Pro Arg Lys His Trp Trp Thr Asp Ser Ser Ala Glu Lys Lys
275 280 285
His Val Trp Phe Gly Glu Ser Met Asp Gly Gly Phe Gln Phe Ser Tyr
290 295 300
Gly Asn Pro Glu Leu Pro Glu Asp Val Leu Asp Val Gln Leu Ala Phe
305 310 315 320
Leu Arg Leu Leu Ser Ser Arg Ala Ser Gln Asn Ile Thr Tyr His Cys
325 330 335
Lys Asn Ser Ile Ala Tyr Met Asp Gln Ala Ser Gly Asn Val Lys Lys
340 345 350
Ala Leu Lys Leu Met Gly Ser Asn Glu Gly Glu Phe Lys Ala Glu Gly
355 360 365
Asn Ser Lys Phe Thr Tyr Thr Val Leu Glu Asp Gly Cys Thr Lys His
370 375 380
Thr Gly Glu Trp Ser Lys Thr Val Phe Glu Tyr Arg Thr Arg Lys Ala
385 390 395 400
Val Arg Leu Pro Ile Val Asp Ile Ala Pro Tyr Asp Ile Gly Gly Pro
405 410 415
Asp Gln Glu Phe Gly Val Asp Val Gly Pro Val Cys Phe Leu *

420 425 430

<210> 1278
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1278
Met Leu Leu Tyr Val Phe Lys Phe Leu Gly Leu Phe Gln Phe Phe His
1 5 10 15
Ser Phe Cys Thr Ala Tyr Gly Pro Pro Gly Gly Cys Gly Asp Ser Gly
20 25 30
Glu Glu Thr Ser Leu Phe Phe Glu Gln Leu Asp Pro Ala Phe Trp Leu
35 40 45
Ala Asn Cys Ser *
50 52

<210> 1279
<211> 73
<212> PRT
<213> Homo sapiens

<400> 1279
Met Leu Gly Ser Ile Cys Asn Val Met Leu Leu Met Leu Ala Ala Ser
1 5 10 15
Ile Pro Glu Ile Cys Thr Phe Gly Pro Thr Lys Leu Ala Ala Asn Cys
20 25 30
Asn Trp Met Pro Ser Arg Val Ala Arg Leu Pro Ser Val Arg Asp Thr
35 40 45
Val Arg Ser Pro Pro Ala Asp Thr Glu Ala Gly Arg Ile Ala Trp Pro
50 55 60
Thr Ser Pro Gly Cys Ser Arg Phe *
65 70 72

<210> 1280
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1280
Met Leu Leu Leu Leu Glu Arg Met Ala Leu Cys Pro Val Leu Asp Val
1 5 10 15
His Thr His Leu Gly Cys Ile Ile Cys Val Phe Asp Val Ala Leu Ser
20 25 30
Arg Glu Leu Ala Leu Leu Cys Arg Lys Ser Asn Trp Trp Val Ile Asn
35 40 45
Trp Leu *
50

<210> 1281
<211> 144
<212> PRT
<213> Homo sapiens

<400> 1281
Met Lys Ser Gly Ser Gly Gly Gly Ser Pro Thr Ser Leu Trp Gly Leu
1 5 10 15
Leu Phe Leu Ser Ala Ala Leu Ser Leu Trp Pro Thr Ser Gly Glu Ile
20 25 30
Cys Gly Pro Gly Ile Asp Ile Arg Asn Asp Tyr Gln Gln Leu Lys Arg
35 40 45
Leu Glu Asn Cys Thr Val Ile Glu Gly Tyr Leu His Ile Leu Leu Ile
50 55 60
Ser Lys Ala Glu Asp Tyr Arg Ser Tyr Arg Phe Pro Lys Leu Thr Val
65 70 75 80
Ile Thr Glu Tyr Leu Leu Leu Phe Arg Val Ala Gly Leu Glu Ser Leu
85 90 95
Gly Asp Leu Phe Pro Asn Leu Thr Val Ile Arg Gly Trp Lys Leu Phe
100 105 110
Tyr Asn Tyr Ala Leu Val Ile Phe Glu Met Thr Asn Leu Lys Asp Ile
115 120 125
Gly Leu Tyr Asn Leu Arg Asn Ile Thr Arg Gly Gly His Gln Asp *
130 135 140 143

<210> 1282
<211> 267
<212> PRT
<213> Homo sapiens

<400> 1282
Met Gly Pro Pro Ser Ala Cys Pro His Arg Glu Cys Ile Pro Trp Gln
1 5 10 15
Gly Leu Leu Leu Thr Ala Ser Leu Leu Thr Phe Trp Asn Ala Pro Thr
20 25 30
Thr Ala Trp Leu Phe Ile Ala Ser Ala Pro Phe Glu Val Ala Glu Gly
35 40 45
Glu Asn Val His Leu Ser Val Val Tyr Leu Pro Glu Asn Leu Tyr Ser
50 55 60
Tyr Gly Trp Tyr Lys Gly Lys Thr Val Glu Pro Asn Gln Leu Ile Ala
65 70 75 80
Ala Tyr Val Ile Asp Asp Thr His Val Arg Thr Pro Gly Pro Ala Tyr
85 90 95
Ser Gly Arg Glu Thr Ile Ser Pro Ser Gly Asp Leu His Phe Gln Asn
100 105 110
Val Thr Leu Glu Asp Thr Gly Tyr Tyr Asn Leu Gln Val Thr Tyr Arg
115 120 125
Asn Ser Gln Ile Glu Gln Ala Ser His His Leu Arg Val Tyr Gln Val
130 135 140
Ser Gly Leu Thr Pro Pro Ser Lys Pro Ala Ala Pro Gln Ser Pro Arg
145 150 155 160
Arg Ala Pro Gly Val Leu Thr Cys His Thr Asn Asn Thr Gly Thr Ser
165 170 175
Phe Gln Trp Ile Phe Asn Asn Gln Arg Leu Gln Val Thr Lys Arg Met

```
            180                 185                 190
Lys Leu Ser Trp Phe Asn His Met Leu Thr Ile Asp Pro Ile Arg Gln
        195                 200                 205
Glu Asp Ala Gly Glu Tyr Gln Cys Glu Val Ser Asn Pro Val Ser Ser
    210                 215                 220
Asn Arg Ser Asp Pro Leu Lys Leu Thr Val Lys Ser Asp Asp Asn Thr
225                 230                 235                 240
Leu Gly Ile Leu Ile Gly Val Leu Val Gly Ser Leu Leu Val Ala Ala
                245                 250                 255
Leu Val Cys Phe Leu Leu Leu Arg Lys Thr Gly
            260                 265     267
```

<210> 1283
<211> 262
<212> PRT
<213> Homo sapiens

<400> 1283

```
Met Leu Val Leu Leu Val Leu Arg Val Ser Leu Ala Ala Leu Val Lys
  1               5                  10                  15
Met Glu Leu Leu Val Arg Trp Ala Pro Val Ala Cys Leu Val Arg Glu
            20                  25                  30
Val Ala Leu Glu Pro Leu Ala Leu Leu Val Leu Val Glu Met Met Val
        35                  40                  45
Leu Leu Val Leu Pro Gly Pro Leu Val Pro Pro Ala Pro Leu Val Leu
    50                  55                  60
Leu Ala Ser Leu Val Leu Leu Val Leu Arg Val Lys Leu Val Pro Lys
65                  70                  75                  80
Gly Pro Glu Ala Leu Lys Val Pro Arg Val Cys Val Val Ser Leu Ala
                85                  90                  95
Pro Leu Ala Leu Leu Val Leu Leu Ala Leu Leu Glu Thr Leu Val Leu
            100                 105                 110
Arg Glu Ser Leu Val Leu Lys Val Pro Met Val Leu Leu Val Leu Leu
        115                 120                 125
Val Leu Leu Ala Ser Leu Val Pro Glu Ala Pro Leu Asp Pro Arg Ala
    130                 135                 140
Pro Ala Ala Leu Leu Val Pro Arg Val Thr Ala Val Asn Leu Val Leu
145                 150                 155                 160
Leu Ala Ala Lys Glu Thr Leu Val Leu Arg Glu Ser Leu Ala Leu Leu
                165                 170                 175
Val Phe Lys Asp Pro Leu Ala Leu Leu Glu Arg Lys Glu Ser Glu Glu
            180                 185                 190
Leu Glu Val Asn Pro Asp Pro Leu Ala Cys Pro Asp Pro Leu Ala Ser
        195                 200                 205
Val Val Asp Leu Val Ala Val Val Ser Leu Ala Gln Met Val Leu Leu
    210                 215                 220
Val Pro Arg Val Pro Leu Val Asn Val Val Leu Leu Ala Leu Leu Ala
225                 230                 235                 240
Pro Lys Asp Leu Leu Val Lys Leu Val Val Pro Val Lys Leu Val Cys
                245                 250                 255
Leu Val Pro Arg Val  *
            260 261
```

<210> 1284

<211> 50
<212> PRT
<213> Homo sapiens

<400> 1284
Met Val Ile Leu Pro Leu Leu Leu Leu Ile Thr Thr Pro Pro Met Thr
1   5   10   15
Phe Leu Ala Phe Leu Leu Thr Leu Ile Leu Ser Cys Lys Asn Cys Ser
            20   25   30
Lys Leu Ala Ala Ser Met Ile Arg Leu Leu Trp Gly Gly Cys Asn Gln
        35   40   45
Glu *
 49

<210> 1285
<211> 323
<212> PRT
<213> Homo sapiens

<400> 1285
Met Leu Val Met Ala Pro Arg Thr Val Leu Leu Leu Leu Ser Ala Ala
1   5   10   15
Leu Ala Leu Thr Glu Thr Trp Ala Gly Ser His Ser Met Arg Tyr Phe
            20   25   30
Tyr Thr Ser Val Ser Arg Pro Gly Arg Gly Glu Pro Arg Phe Ile Ser
        35   40   45
Val Gly Tyr Val Asp Asp Thr Gln Phe Val Arg Phe Asp Ser Asp Ala
    50   55   60
Ala Ser Pro Arg Glu Glu Pro Arg Ala Pro Trp Ile Glu Gln Glu Gly
65   70   75   80
Pro Glu Tyr Trp Asp Arg Asn Thr Gln Ile Tyr Lys Ala Gln Ala Gln
                85   90   95
Thr Asp Arg Glu Ser Leu Arg Asn Leu Arg Gly Tyr Tyr Asn Gln Ser
            100   105   110
Glu Ala Gly Ser His Thr Leu Gln Ser Met Tyr Gly Cys Asp Val Gly
        115   120   125
Pro Asp Gly Arg Leu Leu Arg Gly His Asp Gln Tyr Ala Tyr Asp Gly
    130   135   140
Lys Asp Tyr Ile Ala Leu Asn Glu Asp Leu Arg Ser Trp Thr Ala Ala
145   150   155   160
Asp Thr Ala Ala Gln Ile Thr Gln Arg Lys Trp Glu Ala Ala Arg Glu
                165   170   175
Ala Glu Gln Arg Arg Ala Tyr Leu Glu Gly Glu Cys Val Glu Trp Leu
            180   185   190
Arg Arg Tyr Leu Glu Asn Gly Lys Asp Lys Leu Glu Arg Ala Asp Pro
        195   200   205
Pro Lys Thr His Val Thr His His Pro Ile Ser Asp His Glu Ala Thr
    210   215   220
Leu Arg Cys Trp Ala Leu Gly Phe Tyr Pro Ala Glu Ile Thr Leu Thr
225   230   235   240
Trp Gln Arg Asp Gly Glu Asp Gln Thr Gln Asp Thr Glu Leu Val Glu
                245   250   255
Thr Arg Pro Ala Gly Asp Arg Thr Phe Gln Lys Val Gly Gln Leu Trp
            260   265   270
Val Val Pro Ser Gly Glu Glu Gln Arg Tyr Thr Cys His Val Gln His

```
        275                 280                 285
Val Gly Ala Ala Glu Ala Pro His Pro Ser Glu Met Gly Ser Gly Leu
    290                 295                 300
Pro Ser Ser Thr Val Pro His Arg Trp Ala Leu Val Leu Gly Leu Gly
305                 310                 315                 320
Cys Pro  *
    322
```

<210> 1286
<211> 306
<212> PRT
<213> Homo sapiens

<400> 1286

```
Met Leu Leu Phe Leu Leu Ser Ala Leu Val Leu Leu Thr Gln Pro Leu
 1               5                  10                  15
Gly Tyr Leu Glu Ala Glu Met Lys Thr Tyr Ser His Arg Thr Met Pro
            20                  25                  30
Ser Ala Cys Thr Leu Val Met Cys Ser Ser Val Glu Ser Gly Leu Pro
        35                  40                  45
Gly Arg Asp Gly Arg Asp Gly Arg Glu Gly Pro Arg Gly Glu Lys Gly
    50                  55                  60
Asp Pro Gly Leu Pro Gly Ala Ala Gly Gln Ala Gly Met Pro Gly Gln
65                  70                  75                  80
Ala Gly Pro Val Gly Pro Lys Gly Asp Asn Gly Ser Val Gly Glu Pro
                85                  90                  95
Gly Pro Lys Gly Asp Thr Gly Pro Ser Gly Pro Pro Gly Pro Pro Gly
            100                 105                 110
Val Pro Gly Pro Ala Gly Arg Glu Gly Pro Leu Gly Lys Gln Gly Asn
        115                 120                 125
Ile Gly Pro Gln Gly Lys Pro Gly Pro Lys Gly Glu Ala Gly Pro Lys
    130                 135                 140
Gly Glu Val Gly Ala Pro Gly Met Gln Gly Ser Ala Gly Ala Arg Gly
145                 150                 155                 160
Leu Ala Gly Pro Lys Gly Glu Arg Gly Val Pro Gly Glu Arg Gly Val
                165                 170                 175
Pro Gly Asn Thr Gly Ala Ala Gly Ser Ala Gly Ala Met Gly Pro Gln
            180                 185                 190
Gly Ser Pro Gly Ala Arg Gly Pro Pro Gly Leu Lys Gly Asp Lys Gly
        195                 200                 205
Ile Pro Gly Asp Lys Gly Ala Lys Gly Glu Ser Gly Leu Pro Asp Val
    210                 215                 220
Ala Ser Leu Arg Gln Gln Val Glu Ala Leu Gln Gly Gln Val Gln His
225                 230                 235                 240
Leu Gln Ala Ala Phe Ser Gln Tyr Lys Lys Val Glu Leu Phe Pro Asn
                245                 250                 255
Gly Gln Ser Val Gly Glu Lys Ile Phe Lys Thr Ala Gly Phe Val Lys
            260                 265                 270
Pro Phe Thr Glu Ala Gln Leu Leu Cys Thr Gln Ala Gly Gly Gln Leu
        275                 280                 285
Ala Ser Pro Arg Ser Ala Ala Glu Asn Ala Pro Leu Ala Thr Ala Gly
    290                 295                 300
Pro  *
305
```

<210> 1287
<211> 299
<212> PRT
<213> Homo sapiens

<400> 1287
Met Gly Arg Trp Ala Leu Asp Val Ala Phe Leu Trp Lys Ala Val Leu
1 5 10 15
Thr Leu Gly Leu Val Leu Leu Tyr Tyr Cys Phe Ser Ile Gly Ile Thr
20 25 30
Phe Tyr Asn Lys Trp Leu Thr Lys Ser Phe His Phe Pro Leu Phe Met
35 40 45
Thr Met Leu His Leu Ala Val Ile Phe Leu Phe Ser Ala Leu Ser Arg
50 55 60
Ala Leu Val Gln Cys Ser Ser His Arg Ala Arg Val Val Leu Ser Trp
65 70 75 80
Ala Asp Tyr Leu Arg Arg Val Ala Pro Thr Ala Leu Ala Thr Ala Leu
85 90 95
Asp Val Gly Leu Ser Asn Trp Ser Phe Leu Tyr Val Thr Val Ser Leu
100 105 110
Tyr Thr Met Thr Lys Ser Ser Ala Val Leu Phe Ile Leu Ile Phe Ser
115 120 125
Leu Ile Phe Lys Leu Glu Glu Leu Arg Ala Ala Leu Val Leu Val Val
130 135 140
Leu Leu Ile Ala Gly Gly Leu Phe Met Phe Thr Tyr Lys Ser Thr Gln
145 150 155 160
Phe Asn Val Glu Gly Phe Ala Leu Val Leu Gly Ala Ser Phe Ile Gly
165 170 175
Gly Ile Arg Trp Thr Leu Thr Gln Met Leu Leu Gln Lys Ala Glu Leu
180 185 190
Gly Leu Gln Asn Pro Ile Asp Thr Met Phe His Leu Gln Pro Leu Met
195 200 205
Phe Leu Gly Leu Phe Pro Leu Phe Ala Val Phe Glu Gly Leu His Leu
210 215 220
Ser Thr Ser Glu Lys Ile Phe Arg Phe Gln Gly His Arg Ala Ala Pro
225 230 235 240
Ala Gly Thr Trp Gly Ala Ser Ser Leu Ala Gly Phe Ser Pro Leu Val
245 250 255
Trp Ala Ser Leu Ser Ser Ser Trp Ser Pro Glu Pro Pro Ala Ser Leu
260 265 270
Ser Pro Leu Pro Ala Phe Leu Arg Lys Ser Ala Leu Cys Cys Trp Gln
275 280 285
Leu Ile Cys Trp Ala Ile Arg Ser Ala Ser *
290 295 298

<210> 1288
<211> 161
<212> PRT
<213> Homo sapiens

<400> 1288
Met Glu Ser Ala Leu Pro Ala Ala Gly Phe Leu Tyr Trp Val Gly Ala
1 5 10 15
Gly Thr Val Ala Tyr Leu Ala Leu Arg Ile Ser Tyr Ser Leu Phe Thr

```
                20                  25                  30
Ala Leu Arg Val Trp Gly Val Gly Asn Glu Ala Gly Val Gly Pro Gly
            35                  40                  45
Leu Gly Glu Trp Ala Val Val Thr Gly Ser Thr Asp Gly Ile Gly Lys
        50                  55                  60
Ser Tyr Ala Glu Glu Leu Ala Lys His Gly Met Lys Val Val Leu Ile
65                  70                  75                  80
Ser Arg Ser Lys Asp Lys Leu Asp Gln Val Ser Ser Glu Ile Lys Glu
                85                  90                  95
Lys Phe Lys Val Glu Thr Arg Thr Ile Ala Val Asp Phe Ala Ser Glu
            100                 105                 110
Asp Ile Tyr Asp Lys Ile Lys Thr Gly Leu Ala Gly Leu Glu Ile Gly
        115                 120                 125
Ile Leu Val Asn Asn Val Gly Met Ser Tyr Glu Tyr Pro Glu Tyr Phe
    130                 135                 140
Leu Asp Val Pro Asp Leu Asp Asn Val Ile Lys Lys Asn Asp Lys Tyr
145                 150                 155                 160
*
```

<210> 1289
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1289

```
Met Val Leu Ser Ala Pro Ser Leu Trp Pro Cys Ser Ser Phe Ser Ile
1               5                   10                  15
Ser Cys Leu His Val Gly Leu Thr Ala Phe Leu Phe Gln Val Ala Phe
            20                  25                  30
Leu Cys Leu Leu Cys Cys Val Glu Leu Leu Leu Asp Val  *
        35                  40                  45
```

<210> 1290
<211> 453
<212> PRT
<213> Homo sapiens

<400> 1290

```
Met Thr Ser Lys Phe Ile Leu Val Ser Phe Ile Leu Ala Ala Leu Ser
1               5                   10                  15
Leu Ser Thr Thr Phe Ser Leu Gln Pro Asp Gln Gln Lys Val Leu Leu
            20                  25                  30
Val Ser Phe Asp Gly Phe Arg Trp Asp Tyr Leu Tyr Lys Val Pro Thr
        35                  40                  45
Pro His Phe His Tyr Ile Met Lys Tyr Gly Val His Val Lys Gln Val
    50                  55                  60
Thr Asn Val Phe Ile Thr Lys Thr Tyr Pro Asn His Tyr Thr Leu Val
65                  70                  75                  80
Thr Gly Leu Phe Ala Glu Asn His Gly Ile Val Ala Asn Asp Met Phe
                85                  90                  95
Asp Pro Ile Arg Asn Lys Ser Phe Ser Leu Asp His Met Asn Ile Tyr
            100                 105                 110
```

```
Asp Ser Lys Phe Trp Glu Glu Ala Thr Pro Ile Trp Ile Thr Asn Gln
        115                 120                 125
Arg Ala Gly His Thr Ser Gly Ala Ala Met Trp Pro Gly Thr Asp Val
    130                 135                 140
Lys Ile His Lys Arg Phe Pro Thr His Tyr Met Pro Tyr Asn Glu Ser
145                 150                 155                 160
Val Ser Phe Glu Asp Arg Val Ala Lys Ile Ile Glu Trp Phe Thr Ser
                165                 170                 175
Lys Glu Pro Ile Asn Leu Gly Leu Leu Tyr Trp Glu Asp Pro Asp Asp
            180                 185                 190
Met Gly His His Leu Gly Pro Asp Ser Pro Leu Met Gly Pro Val Ile
        195                 200                 205
Ser Asp Ile Asp Lys Lys Leu Gly Tyr Leu Ile Gln Met Leu Lys Lys
    210                 215                 220
Ala Lys Leu Trp Asn Thr Leu Asn Leu Ile Ile Thr Ser Asp His Gly
225                 230                 235                 240
Met Thr Gln Cys Ser Glu Glu Arg Leu Ile Glu Leu Asp Gln Tyr Leu
                245                 250                 255
Asp Lys Asp His Tyr Thr Leu Ile Asp Gln Ser Pro Val Ala Ala Ile
            260                 265                 270
Leu Pro Lys Glu Gly Lys Phe Asp Glu Val Tyr Glu Ala Leu Thr His
        275                 280                 285
Ala His Pro Asn Leu Thr Val Tyr Lys Lys Glu Asp Val Pro Glu Arg
    290                 295                 300
Trp His Tyr Lys Tyr Asn Ser Arg Ile Gln Pro Ile Ile Ala Val Ala
305                 310                 315                 320
Asp Glu Gly Trp His Ile Leu Gln Asn Lys Ser Asp Asp Phe Leu Leu
                325                 330                 335
Gly Asn His Gly Tyr His Asn Ala Leu Ala Asp Met His Pro Ile Phe
            340                 345                 350
Leu Ala His Gly Pro Ala Phe Arg Lys Asn Phe Ser Lys Glu Ala Met
        355                 360                 365
Asn Ser Thr Asp Leu Tyr Pro Leu Leu Cys His Leu Leu Asn Ile Thr
    370                 375                 380
Ala Met Pro His Asn Gly Ser Phe Trp Asn Val Gln Asp Leu Leu Asn
385                 390                 395                 400
Ser Ala Met Pro Arg Val Val Pro Tyr Thr Gln Ser Thr Ile Leu Leu
                405                 410                 415
Pro Gly Ser Val Lys Pro Ala Glu Tyr Asp Gln Glu Gly Ser Tyr Pro
            420                 425                 430
Tyr Phe Ile Gly Val Ser Leu Gly Ser Ile Ile Val Ile Val Phe Phe
        435                 440                 445
Cys Asn Phe His  *
    450     452
```

```
<210> 1291
<211> 78
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(78)
<223> Xaa = any amino acid or nothing


<400> 1291
Met Leu Ser Val Thr Ala Phe Ile Leu Ala Glu Thr Val Leu Ala Ser
```

```
 1               5                   10                  15
Gln Glu Val Gln Gly Gly Val Gln Val Arg Val Tyr Leu Met Asn Ala
            20                  25                  30
Val Pro Asp Gly Leu Gln Gly Gly Ser Pro Val Gly Gly Leu Gly Leu
        35                  40                  45
Leu Leu Ala Pro Asp Asn Ser Gly His Arg Arg Ser Ser Cys Arg Ile
    50                  55                  60
Pro Ala Ala Arg Val Tyr Xaa Xaa Xaa Xaa Pro Arg Pro Pro
65                  70                  75          78


     <210> 1292
     <211> 416
     <212> PRT
     <213> Homo sapiens


     <400> 1292
Met Val Leu Trp Ile Leu Trp Arg Pro Phe Gly Phe Ser Gly Arg Phe
 1               5                   10                  15
Leu Lys Leu Glu Ser His Ser Ile Thr Glu Ser Lys Ser Leu Ile Pro
            20                  25                  30
Val Ala Trp Thr Ser Leu Thr Gln Met Leu Leu Glu Ala Pro Gly Ile
        35                  40                  45
Phe Leu Leu Gly Gln Arg Lys Arg Phe Ser Thr Met Pro Glu Thr Glu
    50                  55                  60
Thr His Glu Arg Glu Thr Glu Leu Phe Ser Pro Pro Ser Asp Val Arg
65                  70                  75                  80
Gly Met Thr Lys Leu Asp Arg Thr Ala Phe Lys Lys Thr Val Asn Ile
                85                  90                  95
Pro Val Leu Lys Val Arg Lys Glu Ile Val Ser Lys Leu Met Arg Ser
            100                 105                 110
Leu Lys Arg Ala Ala Leu Gln Arg Pro Gly Ile Arg Arg Val Ile Glu
        115                 120                 125
Asp Pro Glu Asp Lys Glu Ser Arg Leu Ile Met Leu Asp Pro Tyr Lys
    130                 135                 140
Ile Phe Thr His Asp Ser Phe Glu Lys Ala Glu Leu Ser Val Leu Glu
145                 150                 155                 160
Gln Leu Asn Val Ser Pro Gln Ile Ser Lys Tyr Asn Leu Glu Leu Thr
                165                 170                 175
Tyr Glu His Phe Lys Ser Glu Glu Ile Leu Arg Ala Val Leu Pro Glu
            180                 185                 190
Gly Gln Asp Val Thr Ser Gly Phe Ser Arg Ile Gly His Ile Ala His
        195                 200                 205
Leu Asn Leu Arg Asp His Gln Leu Pro Phe Lys His Leu Ile Gly Gln
    210                 215                 220
Val Met Ile Asp Lys Asn Pro Gly Ile Thr Ser Ala Val Asn Lys Ile
225                 230                 235                 240
Asn Asn Ile Asp Asn Met Tyr Arg Asn Phe Gln Met Glu Val Leu Ser
                245                 250                 255
Gly Glu Gln Asn Met Met Thr Lys Val Arg Glu Asn Asn Tyr Thr Tyr
            260                 265                 270
Glu Phe Asp Phe Ser Lys Val Tyr Trp Asn Pro Arg Leu Ser Thr Glu
        275                 280                 285
His Ser Arg Ile Thr Glu Leu Leu Lys Pro Gly Asp Val Leu Phe Asp
    290                 295                 300
Val Phe Ala Gly Val Gly Pro Phe Ala Ile Pro Val Ala Lys Lys Asn
305                 310                 315                 320
```

```
Cys Thr Val Phe Ala Asn Asp Leu Asn Pro Glu Ser His Lys Trp Leu
                325                 330                 335
Leu Tyr Asn Cys Lys Leu Asn Lys Val Asp Gln Lys Val Lys Val Phe
            340                 345                 350
Asn Leu Asp Gly Lys Asp Phe Leu Gln Gly Pro Val Lys Glu Glu Leu
        355                 360                 365
Met Gln Leu Leu Gly Leu Ser Lys Glu Arg Lys Pro Ser Val His Val
    370                 375                 380
Val Met Asn Leu Pro Ala Lys Ala Ile Glu Phe Leu Ser Ala Phe Lys
385                 390                 395                 400
Trp Leu Leu Asp Gly Gln Pro Met Pro Ala Val Ser Ser Phe Pro  *
                405                 410                 415
```

<210> 1293
<211> 113
<212> PRT
<213> Homo sapiens

<400> 1293

```
Met Val Arg Pro Leu Leu Leu Leu Asn Leu His Phe His Leu Pro Ser
 1               5                  10                  15
Leu Val Ser Leu Ser Leu Ser Leu Leu Leu Ser Val Ser Leu Ser Leu
            20                  25                  30
Val Asn Ala Val Arg Leu Leu Arg Ala Ser Phe Cys Ser Trp Leu Ile
        35                  40                  45
Ala Lys Ser Leu Ile Thr Leu Trp Val Arg Pro Ser Gln Ile Gly Lys
    50                  55                  60
Leu Lys Ala Leu Ala Ser Ser Thr Thr Ser Met Ala Trp Glu Gly Leu
65                  70                  75                  80
Leu Asp Thr Phe Ala Leu Ser Ile Ser Ser Phe Ser Asn Ser Leu Leu
                85                  90                  95
Gly Ile Leu Leu Cys Phe Leu Lys Ser Pro Asn Ile Phe Gln Ala Ser
            100                 105                 110     112
 *
```

<210> 1294
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1294

```
Met Asp Phe Leu Met Leu Ala Val Cys Ala His Arg Leu Cys Phe Leu
 1               5                  10                  15
Tyr Leu Phe Ile Leu Tyr Glu Ser Lys Asn Lys Arg Glu Cys Glu Gln
            20                  25                  30
Phe Arg Arg Leu Gln Ile Tyr Leu Val Arg Leu Leu Ser Lys Arg Phe
        35                  40                  45
Pro Val Val Val Ile Pro Ala Val  *
    50                  55  56
```

<210> 1295
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1295
Met Phe Leu Ser Leu Cys Leu Leu Ser Ala Ala Leu Thr Lys Ile Ser
1 5 10 15
Ser Lys Ile Leu Tyr Lys Pro Gly Thr Lys Val Thr Ser Leu Gln Phe
20 25 30
Ile Pro Thr Ser Ser Ser Tyr Thr His Met Asn Cys Val Asn Gly Ser
35 40 45
Thr Asp Pro Ile Tyr Val Ser Gly Arg Arg Arg Met Cys Ser Ser Cys
50 55 60
Val Phe Ile *
65 67

<210> 1296
<211> 66
<212> PRT
<213> Homo sapiens

<400> 1296
Met Trp Ser Ala His Pro Leu Ala Val Leu Ser Leu Lys Leu Thr Leu
1 5 10 15
Phe Ser Leu Thr Ser Asp Trp Leu Ser Ser Lys Asp Met Ala Ile Ser
20 25 30
Leu Ala Phe Lys Ile Ser Gln Ile Leu Cys Ser Val Leu Ser Ala Pro
35 40 45
Gly Lys Arg Leu Ile Ser Val Leu Trp Asn Thr Ser Ser Leu Lys Arg
50 55 60
Ser *
65

<210> 1297
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1297
Met Leu His Ser Gln Leu Leu Ala Val Ser Phe Arg Leu Ile Val Thr
1 5 10 15
Leu Pro Leu Ser Ile Gln Asp Trp Asp Asp Ala Glu Asn Met Lys Gly
20 25 30
Leu Gln Tyr Ile Phe Asn Thr Leu Trp Ser Val Ser Ser Pro Val Ile
35 40 45
Thr Ser Ile Leu Ser Ser Lys His *
50 55 56

<210> 1298

<211> 235
<212> PRT
<213> Homo sapiens

<400> 1298
```
Met Arg Lys Thr Arg Leu Trp Gly Leu Leu Trp Met Leu Phe Val Ser
 1               5                  10                  15
Glu Leu Arg Ala Ala Thr Lys Leu Thr Glu Glu Lys Tyr Glu Leu Lys
            20                  25                  30
Glu Gly Gln Thr Leu Asp Val Lys Cys Asp Tyr Thr Leu Glu Lys Phe
        35                  40                  45
Ala Ser Ser Gln Lys Ala Trp Gln Ile Ile Arg Asp Gly Glu Met Pro
    50                  55                  60
Lys Thr Leu Ala Cys Thr Glu Arg Pro Ser Lys Asn Ser His Pro Val
 65                 70                  75                  80
Gln Val Gly Arg Ile Ile Leu Glu Asp Tyr His Asp His Gly Leu Leu
                85                  90                  95
Arg Val Arg Met Val Asn Leu Gln Val Glu Asp Ser Gly Leu Tyr Gln
            100                 105                 110
Cys Val Ile Tyr Gln Pro Pro Lys Glu Pro His Met Leu Phe Asp Arg
        115                 120                 125
Ile Arg Leu Val Val Thr Lys Gly Phe Ser Gly Thr Pro Gly Ser Asn
    130                 135                 140
Glu Asn Ser Thr Gln Asn Val Tyr Lys Ile Pro Pro Thr Thr Thr Lys
145                 150                 155                 160
Ala Leu Cys Pro Leu Tyr Thr Thr Pro Arg Thr Val Thr Gln Ala Pro
                165                 170                 175
Pro Lys Ser Thr Ala Asp Val Ser Thr Pro Asp Ser Glu Ile Asn Leu
            180                 185                 190
Thr Asn Val Thr Asp Ile Ile Arg Val Pro Val Phe Asn Ile Val Ile
        195                 200                 205
Leu Leu Ala Gly Gly Phe Leu Ser Lys Ser Leu Val Phe Ser Val Leu
    210                 215                 220
Phe Ala Val Thr Leu Arg Ser Phe Val Pro  *
225                 230                 234
```

<210> 1299
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1299
```
Met Arg Trp Lys Val Gln Val Asn Ser Leu Met Val Leu Pro Ser Leu
 1               5                  10                  15
Thr Val Cys Tyr Ser Thr His Leu Ser Thr Gly Cys Arg His Ile Lys
            20                  25                  30
Val Asn Val Gln Val Leu Glu Asn Ile Gln Arg Ile Leu Asn Val Gln
        35                  40                  45
Asn Ser Glu Lys Gln Ile Tyr Ala Glu Cys Val Val Gly Ala Phe  *
    50                  55                  60          63
```

<210> 1300
<211> 80

<212> PRT
<213> Homo sapiens

<400> 1300
Met Ala Ser Arg Ser Asn Tyr Leu Thr Glu Thr Leu Thr Pro Phe Pro
1 5 10 15
Ala Leu Leu Ser Leu Phe Met Leu Tyr Leu Ser His Thr Gly Phe Asp
20 25 30
Asn Ile Ile Pro Thr Phe Pro Thr Lys Pro Ala Tyr Thr Leu His Arg
35 40 45
Leu Leu Pro His Cys Pro Asp Ile His Ile Ala Tyr Ser Leu Ile Ser
50 55 60
Ser His Leu Phe Ala Gln Gly Ala Ser Leu Ser Thr Arg Thr His *
65 70 75 79

<210> 1301
<211> 87
<212> PRT
<213> Homo sapiens

<400> 1301
Met Arg Phe Arg Ala Glu Pro Lys Ser Arg Pro Leu Pro Ala Leu Cys
1 5 10 15
His Val Leu Ile Ala Cys Ile Val Phe Arg Trp Ala Phe Ala Gln Pro
20 25 30
Leu Pro Ser Ser Arg Ser Tyr Arg Ser Ser Gly Glu Phe Pro Arg Ser
35 40 45
Pro Ser Phe Lys Lys Thr Lys Thr Pro Ser Trp Gly Glu Arg Arg Val
50 55 60
Leu Leu Tyr Ser Arg Met Leu Arg Ala Asn Leu Arg Met Trp Arg Glu
65 70 75 80
Tyr Trp Ser Gln Lys Ser Ile
85 87

<210> 1302
<211> 143
<212> PRT
<213> Homo sapiens

<400> 1302
Met Asp His Cys Gly Ala Leu Phe Leu Cys Leu Cys Leu Leu Thr Leu
1 5 10 15
Gln Asn Ala Thr Thr Glu Thr Trp Glu Glu Leu Leu Ser Tyr Met Glu
20 25 30
Asn Met Gln Val Ser Arg Gly Arg Ser Ser Val Phe Ser Ser Arg Gln
35 40 45
Leu His Gln Leu Glu Gln Met Leu Leu Asn Thr Ser Phe Pro Gly Tyr
50 55 60
Asn Leu Thr Leu Gln Thr Pro Thr Ile Gln Ser Leu Ala Phe Lys Leu
65 70 75 80
Ser Cys Asp Phe Ser Gly Leu Ser Leu Thr Ser Ala Thr Leu Lys Arg
85 90 95

Val Pro Gln Ala Gly Gly Gln His Ala Arg Gly Gln His Ala Met Gln
100 105 110
Phe Pro Ala Glu Leu Thr Arg Asp Ala Cys Lys Thr Arg Pro Arg Glu
115 120 125
Leu Arg Leu Ile Cys Ile Tyr Phe Ser Asn Thr His Phe Phe Lys
130 135 140 143

<210> 1303
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1303
Met Ile Leu Leu Met Ser Ala Ala Ile Phe Cys Ser Ala Glu Val Phe
1 5 10 15
Thr Arg Gly Ser Phe Phe Ser Asp Met Leu Thr Leu Asp Arg Val Lys
20 25 30
Ala Lys Gly Leu Gln Gly Glu Gly Ala Ala Ser Thr Cys Ala Leu Ala
35 40 45
Ala Asp Ser Gln Gly Ser Gly Ala Ser Gly Thr Lys
50 55 60

<210> 1304
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1304
Met Lys Met Met Phe Ile Ile Thr Asn Trp Leu Asn Tyr Tyr Phe Leu
1 5 10 15
Leu Phe Ser Pro Ser Asn Pro Gln Ile Gln Ser Ile Leu His Glu Val
20 25 30
Ala Pro Leu Trp Phe Arg Thr Leu Tyr Thr Leu Leu Arg Gly Cys Ser
35 40 45
Thr Trp Lys Gly Leu Ser Ser *
50 55

<210> 1305
<211> 63
<212> PRT
<213> Homo sapiens

<400> 1305
Met Asn Ile Ile Phe Ile Tyr Leu Ala Thr Ser Leu Ala Phe Leu Ile
1 5 10 15
Ile Asn Leu Ser Gln Leu Leu Phe Thr Glu Tyr Leu His Phe Arg Cys
20 25 30
Cys Ser Lys Cys Ser Thr Cys Ile Asn Leu Leu Ser His His Glu Trp
35 40 45
Glu Leu Leu Pro Ser Ser Tyr Arg Arg Gly Ser Arg Ser Pro *

50 55 60 62

<210> 1306
<211> 138
<212> PRT
<213> Homo sapiens

<400> 1306
```
Met Gln Asn Arg Thr Gly Leu Ile Leu Cys Ala Leu Ala Leu Leu Met
 1               5                  10                  15
Gly Phe Leu Met Val Cys Leu Gly Ala Phe Phe Ile Ser Trp Gly Ser
            20                  25                  30
Ile Phe Asp Cys Gln Gly Ser Leu Ile Ala Ala Tyr Leu Leu Leu Pro
        35                  40                  45
Leu Gly Phe Val Ile Leu Leu Ser Gly Ile Phe Trp Ser Asn Tyr Arg
    50                  55                  60
Gln Val Thr Glu Ser Lys Gly Val Leu Arg His Met Leu Arg Gln His
65                  70                  75                  80
Leu Ala His Gly Ala Leu Pro Val Ala Thr Val Asp Arg Pro Asp Phe
                85                  90                  95
Tyr Pro Pro Ala Tyr Glu Glu Ser Leu Glu Val Glu Lys Gln Ser Cys
            100                 105                 110
Pro Ala Glu Arg Glu Ala Pro Arg His Ser Ser Thr Ser Ile Tyr Arg
        115                 120                 125
Asp Gly Pro Gly Ile Pro Gly Trp Lys  *
    130                 135     137
```

<210> 1307
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1307
```
Met Met Ala Ile Lys Pro Thr Ile Leu Val Thr Gln Gly Leu Ile Leu
 1               5                  10                  15
Cys Trp Lys Cys His Lys Met Ile Cys Ser Tyr Phe Asn Leu Gln Leu
            20                  25                  30
Glu Arg His Phe Leu Glu Thr Ile Gln Ser Asp Ser Phe Met Glu Lys
        35                  40                  45
Leu Thr Leu Thr Asp Leu Thr Ile Tyr Arg Ile His Val Ala Thr His
    50                  55                  60                  64
```

<210> 1308
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1308

Met Pro Cys Ser Gly Ser Ser Val Gln Thr Phe Arg Pro Leu Leu Ile
1 5 10 15
Phe His Asn Val Thr Phe Phe Ile Leu Pro Val Lys Cys Phe Asn Ala
20 25 30
Leu Ile Asn Val Leu Glu Arg Pro Phe Trp Gln Leu Leu Gly Glu Ile
35 40 45
Gly Glu Glu Tyr Arg Gly Ser Glu Asp Trp Leu Gly Gly Ser Phe Arg
50 55 60 64
*

<210> 1309
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1309
Met Arg Ile Trp His Arg Trp Leu Leu Val Arg Ile Leu Phe Pro Ala
1 5 10 15
Pro Gly Leu Gln Thr Ala Thr Phe Ser Val Cys Phe His Val Ala Glu
20 25 30
Ser Glu Leu Trp His Leu Leu Cys Phe Phe Phe Phe Leu Ala Leu Leu
35 40 45
Pro Pro Arg Trp Lys Ala Arg Gly Pro Ile Trp Val His Gly Thr Leu
50 55 60
Gly Phe Arg Val Gly Arg Asn Phe Leu Ala *
65 70 74

<210> 1310
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1310
Met Lys Leu Gly Asp Val Phe Val Lys Leu Leu Val Ser Leu Ala Gly
1 5 10 15
Glu Ile Leu Leu Ala Pro Leu Val Ser Ala Ser Gly Met Gly Pro Ala
20 25 30
Gly Val Glu Ala Leu Glu Glu Val Ser Ala Leu Ser Val *
35 40 45

<210> 1311
<211> 105
<212> PRT
<213> Homo sapiens

<400> 1311
Met Tyr Trp Val Thr Val Ile Thr Leu Ile Tyr Gly Tyr Tyr Ala Trp
1 5 10 15
Val Gly Phe Trp Pro Glu Ser Ile Pro Tyr Gln Asn Leu Gly Pro Leu

```
                20                  25                  30
Gly Pro Leu Thr Gln Tyr Leu Met Asp His His His Thr Leu Leu Cys
            35                  40                  45
Asn Gly Tyr Trp Leu Ala Trp Leu Ile His Val Gly Glu Ser Leu His
        50                  55                  60
Ala Ile Leu Leu Gly Glu Arg Lys Gly Ile Thr Ser Gly Arg Ser Gln
65                  70                  75                  80
Leu Leu Trp Leu Leu Gln Thr Leu Phe Phe Gly Ile Thr Thr Leu Thr
                85                  90                  95
Ile Phe Asp Ala Tyr Lys Arg Lys Arg
            100                 105
```

<210> 1312
<211> 114
<212> PRT
<213> Homo sapiens

<400> 1312

```
Met Lys Gly Lys Trp Cys Cys Ser Leu Leu Cys Gln Ser Pro Gln Val
 1               5                  10                  15
Gln Thr Ala Leu Val Cys Pro Leu Ser Leu Ser Leu Gly Pro Pro Gly
            20                  25                  30
Pro Gln Cys Pro Leu Leu Trp Leu Gly Gln Glu Asp Leu Pro Asp Ile
        35                  40                  45
Ala Arg Cys Ile Thr Asp Asp Cys Ser Gln Leu Pro Gln Ala Pro Ala
    50                  55                  60
Ser Leu Ala Ser Cys Phe Phe Pro Gln Ser Cys Leu Leu Ile Ser Ile
65                  70                  75                  80
His Leu Ser Met Gly Tyr Ser Trp Thr Leu Gly Leu Gly Val Gly Ile
                85                  90                  95
Arg Leu Leu Pro Thr Lys Gly Val Lys Val Thr His Phe Pro Tyr His
            100                 105                 110
Ala  *
113
```

<210> 1313
<211> 88
<212> PRT
<213> Homo sapiens

<400> 1313

```
Met Ser Ser Ser Gly Gln Leu Gly His Pro Pro Arg Ala Pro His Ser
 1               5                  10                  15
Trp Arg Arg Trp Cys Trp Trp Leu Phe Met Leu Ala Thr Ser Leu Ser
            20                  25                  30
Arg Arg Arg Arg Pro Ser Thr Pro Leu Ile His Tyr Arg Val Phe Thr
        35                  40                  45
Val Asn His Lys Met Asp Pro Val Thr Arg Thr Phe Thr Leu Asp Ile
    50                  55                  60
Lys Val Val Phe Pro Asp Glu Gly Trp Gly Val Val Val Asp Pro Gly
65                  70                  75                  80
His Trp Gly Tyr Met Val Cys  *
                85          87
```

<210> 1314
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1314
Met Gly Gly Arg Leu Trp Ile Phe Leu Gln Leu Cys Gln Ser Leu Gly
1   5   10   15
Leu Ser Thr Val Val Ser Ser Arg Pro Val Ala Cys Leu Glu Ser Val
            20   25   30
Pro Gly Met Cys Met Ser Val Cys Met Pro Leu Asn Tyr Arg Gly Ser
        35   40   45
Asn Phe Ser Glu Thr Asp Val Trp Met Asp Leu Ser Arg Ala His Leu
    50   55   60   64
*

<210> 1315
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1315
Met Leu Ile Pro Ile Pro Val His Ile Phe Pro Leu Ser Ser Leu Leu
1   5   10   15
Gly Asp Gly Thr Met Arg Leu Leu Pro Asp Ile Ser Ser Asp Trp Leu
            20   25   30
Cys Leu Asn Gln Glu Phe Ala Pro Val Gln Ser Ala Ile Ala Met Glu
        35   40   45
Trp Gly Ser Cys Val Gly Asp Gln Asp Asp Thr His Trp Ile Cys Leu
    50   55   60
Arg Gln Thr Ser Gly Val *
65   70

<210> 1316
<211> 114
<212> PRT
<213> Homo sapiens

<400> 1316
Met Ala Thr Pro Ser Ser Pro Trp Trp Ala His Ser Gly Leu Pro Pro
1   5   10   15
Leu Phe Ser Ser Gly Leu Ser Trp Arg Leu Val Pro Leu Phe Trp Cys
            20   25   30
Leu Gln Ser Leu Thr Gly Phe Leu Gly Pro Cys Leu Pro Arg Thr Thr
        35   40   45
Arg Ala Phe Leu Ser Leu Gln Ser Trp Asp Leu Pro Gly Thr Arg Pro
    50   55   60
Gly Ser Gln Ala Gln Gly Phe Thr Ala Cys Asn Ala Ala Asn Thr Pro

```
 65                  70                  75                  80
Gly Leu Ala Ala Leu Pro Gly Ser Gly Ala Phe Ser Val Ile Pro Val
                85                  90                  95
Ser Leu Leu Leu Pro Val Pro Glu Gly Leu Gly Arg Thr Tyr Leu Tyr
            100                 105                 110
Ser  *
113


     <210> 1317
     <211> 91
     <212> PRT
     <213> Homo sapiens


     <400> 1317
Met Met Val Trp Asn Leu Phe Pro Cys Phe Pro Pro Leu Leu Leu Leu
  1               5                  10                  15
Gln Phe Ile Asp Cys Gln Gln Ser Ser Glu Ile Glu Gln Gly Phe Thr
             20                  25                  30
Arg Ser Leu Leu Gly His Pro Ile Phe Phe Cys Pro Asp Pro Cys Trp
         35                  40                  45
Gln Ser Cys Met Asn Cys Val Ile Leu Leu Ser Ala Phe Phe Phe Leu
     50                  55                  60
Phe Asp Lys Met Asp Ile Lys Asn Ser Cys Cys Ala Lys Val Ser Ser
 65                  70                  75                  80
Leu Leu Gln Glu Glu Asn Gln Phe Phe Phe  *
                85                  90


     <210> 1318
     <211> 65
     <212> PRT
     <213> Homo sapiens


     <400> 1318
Met Leu Pro Leu Ile Ser Ser Ile Lys Ile Leu Lys Leu Leu Tyr Tyr
  1               5                  10                  15
Phe Ser Val Trp Gly Trp Gly Phe Phe Phe Phe Glu Thr Glu Phe Arg
             20                  25                  30
Ser Cys Cys Pro Gly Trp Ser Ala Met Val Arg Ser Gln Leu Thr Ala
         35                  40                  45
Thr Ser Thr Ser Arg Val Gln Ala Ile Leu Leu Pro Gln Pro Pro Glu
     50                  55                  60                  64
 *


     <210> 1319
     <211> 46
     <212> PRT
     <213> Homo sapiens


     <400> 1319
```

Met Val Thr Leu Leu Ile Ala Lys Gln Phe Trp Ile Phe Thr Val Asp
1 5 10 15
Leu His Leu Ser Asp Tyr Val Leu Glu Leu Ser Arg Tyr Leu Ile Asn
20 25 30
Ala Cys Phe Tyr Ser Pro Cys Ser Gln Pro Ile Glu Lys *
35 40 45

<210> 1320
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1320
Met Pro Ala Leu Leu Val Leu Lys Val Val Lys Val Leu Leu Pro Met
1 5 10 15
Val Leu Thr Gly Leu Gly Val Glu Glu Leu Lys Glu Met Val Leu Leu
20 25 30
Leu Pro Val Pro Cys Ala Ala Ile Ile Gly Ser Phe Lys Leu *
35 40 45 46

<210> 1321
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1321
Met Ile Cys Phe Cys Leu Pro Val Cys Pro Lys Thr His Leu Ala His
1 5 10 15
Pro Met Leu Ala Thr Leu Ala Phe Val Ser Leu Leu Glu Tyr Ala Lys
20 25 30
His Cys Leu Arg Asp Phe Ile Leu Val Ser Phe Leu Leu Gly Met Leu
35 40 45
Phe Leu Arg Tyr Gln His *
50 54

<210> 1322
<211> 301
<212> PRT
<213> Homo sapiens

<400> 1322
Met Lys Ile Ala Phe Gly Asn Leu Trp Met Glu Ile Leu Tyr Leu Lys
1 5 10 15
Pro Pro Trp Thr Leu Leu His Leu Leu Gln Cys Phe Lys Lys His Trp
20 25 30
Leu Ala Val Phe Gly Leu Val Met Glu Lys Asn Leu Leu Leu Thr Ile
35 40 45
Glu Ser Leu Tyr Lys Asn Leu Arg Lys Ala Asn Lys Ala Val Asp Phe
50 55 60
Thr Thr Val Lys Phe Leu Leu Gln Asp Ser Arg Ser Leu Leu His Ala

65 70 75 80
Phe Ser Thr Arg Ser Asn Tyr Asp Gly Ile Leu Pro Gln Thr Phe Ala
85 90 95
Gln Val Asn Asn Leu Leu Gln Thr Phe Ala Glu Val Lys Thr Lys Leu
100 105 110
Lys Pro Asn Ser Ser Glu Asn Thr Val Thr Lys Lys Gln Glu Gly Thr
115 120 125
Ser Leu Lys Asn Ser His Asn Gln Glu Ile Thr Val Phe Ser Ser Ser
130 135 140
His Leu Pro Gln Pro Ser Arg His Gln Glu Ile Trp Ser Ile Leu Glu
145 150 155 160
Ser Val Trp Ile Thr Ile Tyr Gln Asn Ser Thr Asp Val Phe Gln Arg
165 170 175
Leu Gly Ser Asn Ser Ala Leu Thr Thr Ser Asn Ile Ala Ser Phe Glu
180 185 190
Glu Ala Phe Ile Cys Leu Gln Lys Leu Met Ala Ala Val Arg Asp Ile
195 200 205
Leu Glu Gly Ile Gln Arg Ile Leu Ala Pro Asn Ser Asn Tyr Gln Asp
210 215 220
Val Glu Thr Leu Tyr Asn Phe Leu Ile Lys Tyr Glu Val Asn Lys Asn
225 230 235 240
Val Lys Phe Thr Ala Gln Glu Ile Tyr Asp Cys Val Ser Gln Thr Glu
245 250 255
Tyr Arg Glu Lys Leu Thr Ile Gly Cys Arg Gln Leu Val Glu Met Glu
260 265 270
Tyr Thr Met Gln Gln Cys Asn Ala Ser Val Tyr Met Glu Ala Lys Asn
275 280 285
Arg Gly Trp Cys Glu Asp Met Leu Asn Tyr Arg Ile *
290 295 300

<210> 1323
<211> 85
<212> PRT
<213> Homo sapiens

<400> 1323
Met Thr Glu His Leu Ala Gln Gln Ser Glu Phe Ala Ala Thr Leu Leu
1 5 10 15
Leu Leu Trp Ala Pro Leu Lys Thr Gly Arg Leu Thr Asn Ser Phe Val
20 25 30
Asn Gly Pro Gly Gln His Gly Lys Met Cys Cys Ile Leu Pro Pro Lys
35 40 45
Thr Pro Val Ser Thr Lys Asn Ala Lys Ile Gly Arg Ala Trp Trp Cys
50 55 60
Thr Ser Val Ile Pro Ala Thr Trp Glu Ala Asp Thr Gly Glu Ser Leu
65 70 75 80
Glu Pro Gly Arg *
84

<210> 1324
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1324
Met Leu His His Ser Gln Leu Ile Phe Val Phe Leu Val Gln Thr Gly
1 5 10 15
Phe His His Val Ala Leu Ser Gly Phe Lys Leu Leu Ala Ser Ser Asn
20 25 30
Leu Pro Thr Leu Asp Pro Lys Val Leu Gly Leu Gln Val *
35 40 45

<210> 1325
<211> 87
<212> PRT
<213> Homo sapiens

<400> 1325
Met Gly Leu Ser Lys Ala Phe Leu Ile Thr Arg Thr Val Phe Leu Ile
1 5 10 15
Ser Ser Leu Ser Phe Tyr Ser Phe Leu Gly Phe Pro Ser Leu Cys Phe
20 25 30
Thr Gly Ser Cys Met Leu Ser Thr Leu Phe Ile Arg Ala Leu Ser Ile
35 40 45
Leu Val Ile Ile Val Leu Asn Ser Arg Ser Asp Lys Ser Asn Thr Pro
50 55 60
Ala Ile Ser Glu Ser Gly Ser Asp Ala Cys Ser Phe Ser Ser Asn Phe
65 70 75 80
Val Phe Cys Leu Leu Val *
85 86

<210> 1326
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1326
Met Ser Leu Phe Leu Phe Phe Leu Met Phe Gln Val Leu Ser Glu Val
1 5 10 15
Ser Trp Gly Gly Val Gly Ser Val Ser Asn Gln Gly Leu Glu His His
20 25 30
Glu Ile Val Thr Pro Asp Leu Gln Ser Leu Ala Gly Gly Trp Thr Gly
35 40 45
Gly Arg Glu Arg Gly Phe Leu Phe Thr Phe Asn Ile Phe Leu Gln Lys
50 55 60
Lys Gln Thr Ile *
65 68

<210> 1327
<211> 103
<212> PRT
<213> Homo sapiens

<221> misc_feature

<222> (1)...(103)
<223> Xaa = any amino acid or nothing

<400> 1327
Met Val Gly Phe Gly Thr Asn Arg Arg Ala Gly Arg Leu Pro Ser Leu
1 5 10 15
Val Leu Val Val Leu Leu Val Val Ile Val Val Leu Ala Phe Asn Tyr
20 25 30
Trp Ser Ile Ser Ser Arg His Val Leu Leu Glu Glu Glu Val Ala Glu
35 40 45
Leu Gln Gly Arg Val Gln Arg Ala Glu Val Ala Leu Trp Arg Val Gly
50 55 60
Gly Arg Asn Cys Asp Leu Leu Leu Val Val Gly Thr Arg Ser Arg Arg
65 70 75 80
Ile Glu Glu Arg Gly Ala Asp Tyr Ser Arg Leu Ser Arg Arg Leu Gln
85 90 95
Xaa Lys Glu Gly Leu Val Asn
100 103

<210> 1328
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1328
Met Arg Ala Arg Pro Ala Cys Thr Ala Thr Phe Pro Ser Phe His Leu
1 5 10 15
Ala Leu Asp Ser Ser Tyr Leu Pro Cys Cys Lys Gly Lys Ala Thr Phe
20 25 30
Ile Pro Lys Ser Arg Ile Tyr Leu Gln Glu Ala Lys Gly Ser Gly Glu
35 40 45
Pro Leu Gly *
50 51

<210> 1329
<211> 204
<212> PRT
<213> Homo sapiens

<400> 1329
Met Cys Thr Arg Asn Leu Ala Leu Leu Phe Ala Pro Ser Val Phe Gln
1 5 10 15
Thr Asp Gly Arg Gly Glu His Glu Val Arg Val Leu Gln Glu Leu Ile
20 25 30
Asp Gly Tyr Ile Ser Val Phe Asp Ile Asp Ser Asp Gln Val Ala Gln
35 40 45
Ile Asp Leu Glu Val Ser Leu Ile Thr Thr Trp Lys Asp Val Gln Leu
50 55 60
Ser Gln Ala Gly Asp Leu Ile Met Glu Val Tyr Ile Glu Gln Gln Leu
65 70 75 80
Pro Asp Asn Cys Val Thr Leu Lys Val Ser Pro Thr Leu Thr Ala Glu
85 90 95

Glu Leu Thr Asn Gln Val Leu Glu Met Arg Gly Thr Ala Ala Gly Met
100 105 110
Asp Leu Trp Val Thr Phe Glu Ile Arg Glu His Gly Glu Leu Glu Arg
115 120 125
Pro Leu His Pro Lys Glu Lys Val Leu Glu Gln Ala Leu Gln Trp Cys
130 135 140
Gln Leu Pro Glu Pro Cys Ser Ala Ser Leu Leu Leu Lys Lys Val Pro
145 150 155 160
Leu Ala Gln Ala Gly Cys Leu Phe Thr Gly Ile Arg Arg Glu Ser Pro
165 170 175
Arg Val Gly Leu Phe Ala Val Phe Val Arg Ser His Leu Ala Cys Trp
180 185 190
Gly Ser Arg Phe Gln Glu Arg Phe Phe Leu Val Ala
195 200 204

<210> 1330
<211> 199
<212> PRT
<213> Homo sapiens

<400> 1330
Met Pro Val Pro Ala Leu Cys Leu Leu Trp Ala Leu Ala Met Val Thr
1 5 10 15
Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala Gln His
20 25 30
Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu Gly Gln Ala
35 40 45
Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu Thr Lys Ala Arg
50 55 60
Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu Leu Leu Gly Gln Glu
65 70 75 80
Val Ser Arg Gly Arg Asp Ala Ala Gln Glu Leu Arg Ala Ser Leu Leu
85 90 95
Glu Thr Gln Met Glu Glu Asp Ile Leu Gln Leu Gln Ala Glu Ala Thr
100 105 110
Ala Glu Val Leu Gly Glu Val Ala Gln Ala Gln Lys Val Leu Arg Asp
115 120 125
Ser Val Gln Arg Leu Glu Val Gln Leu Arg Ser Ala Trp Leu Gly Pro
130 135 140
Ala Tyr Arg Glu Phe Glu Val Leu Lys Ala His Ala Asp Lys Gln Ser
145 150 155 160
His Ile Leu Trp Ala Leu Thr Gly His Val Gln Arg Gln Arg Arg Glu
165 170 175
Met Val Ala Gln Gln His Arg Leu Arg Gln Ile Gln Glu Arg Leu His
180 185 190
Thr Ala Ala Leu Pro Ala *
195 198

<210> 1331
<211> 81
<212> PRT
<213> Homo sapiens

<400> 1331
Met Ala Arg Pro Ser Ala Phe Pro Ile Gly Val Cys Leu Thr Leu Pro
1 5 10 15
Met Ala Trp Ile Ser Pro Gly Leu Ala Val Pro Ser Cys Pro Gln Tyr
20 25 30
Ile Leu Gln Ala Gln Gly Cys Ile Leu Asp Met Lys Thr Arg Gly Ser
35 40 45
His Gly Glu Ser Ala Val Pro Gly Ala His Gly Ser Arg Pro Phe His
50 55 60
Pro Leu Ala Glu Pro Asn Pro Pro Arg Gln Lys Leu Thr Pro Cys Thr
65 70 75 80
*

<210> 1332
<211> 73
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(73)
<223> Xaa = any amino acid or nothing

<400> 1332
Met Thr Ile Ile Leu Gln Ile Glu Thr Val Ile Phe Leu Leu Tyr Leu
1 5 10 15
Ala Pro Asp Thr Val Arg Pro Leu Thr Ile Ile Thr Gly Met Ala Gly
20 25 30
Ile Val Lys Gln Gln Ile Asp Ser His Ile Thr Asp Pro Asp Gln Gln
35 40 45
Asn Asn Gly Leu Ser Leu Ser Gly Pro Pro Pro Ala Pro Asp Pro Leu
50 55 60
Asp Xaa Leu Val Pro Thr Leu Trp Gly
65 70 73

<210> 1333
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1333
Met Leu Val Tyr Ile Leu Trp Asn Met Tyr Phe Asn Val Cys Ile Val
1 5 10 15
Pro Gly Val Ile Lys Ser Lys Thr Gly Thr Gln Asp Leu Ser Gly Leu
20 25 30
Trp Pro Leu Gly Thr Phe Pro Leu Ile Thr Phe Leu Pro Thr Trp Leu
35 40 45
Ser Tyr Gly *
50 51

<210> 1334

<211> 65
<212> PRT
<213> Homo sapiens

<400> 1334
Met Ile Leu Phe Gln Leu Pro Ser Asn Val Phe Val Leu Leu Met Phe
1 5 10 15
Leu Phe Leu Phe Glu Phe Phe Leu Thr Leu Val Pro Met Trp Ala Phe
20 25 30
Pro Gly Asp Lys Thr Phe Val Ser Pro Ala Ser Ser Leu Ser Phe Leu
35 40 45
Asp Leu Ser Phe Leu Leu Phe Cys Asn Ser Val Ser Ile Gly Lys Gln
50 55 60 64
*

<210> 1335
<211> 112
<212> PRT
<213> Homo sapiens

<400> 1335
Met Leu His Pro Glu Thr Ser Pro Gly Arg Gly His Leu Leu Ala Val
1 5 10 15
Leu Leu Ala Leu Leu Gly Thr Ala Trp Ala Glu Val Trp Pro Pro Gln
20 25 30
Leu Gln Glu Gln Ala Pro Met Ala Gly Ala Leu Asn Arg Lys Glu Ser
35 40 45
Phe Leu Leu Leu Ser Leu His Asn Arg Leu Arg Ser Trp Val Gln Pro
50 55 60
Pro Ala Ala Asp Met Arg Arg Leu Asp Trp Ser Asp Ser Leu Ala Gln
65 70 75 80
Leu Ala Gln Ala Arg Ala Ala Leu Cys Gly Ile Pro Thr Pro Ser Leu
85 90 95
Ala Ser Gly Leu Trp Arg Thr Leu Gln Val Gly Trp Asn Met Gln Leu
100 105 110 112

<210> 1336
<211> 105
<212> PRT
<213> Homo sapiens

<400> 1336
Met Thr Gly Asn Leu Cys Phe Phe Ser Ile Lys Gly Tyr Leu Leu Thr
1 5 10 15
Ser Glu Ile Leu Met Ile Tyr Leu Thr Leu Glu Phe Cys Ile Leu Arg
20 25 30
Gly Lys His Leu Asn Val Ser Phe Lys Ala Gly Asp Thr Phe Ile Leu
35 40 45
Tyr Leu Gly Ser Leu Gly Phe Glu Glu Glu Gly Gly Pro Glu Ile Leu

```
    50                  55                  60
Lys Asp Cys Met Gly Gly Leu Ser Ser Pro Pro Leu Trp Lys Ala Glu
65                  70                  75                  80
Ala Gly Cys Ile Ile Trp Gly Leu Gly Val Trp Asp His Pro Trp Ala
                85                  90                  95
Thr Thr Arg His Pro Leu Leu Cys  *
            100             104
```

<210> 1337
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1337

```
Met Tyr Val Leu Ser Ser Ala His Leu Cys Phe Leu Cys Leu Gln Cys
 1               5                  10                  15
Ser Ser Leu Glu Val Tyr Leu Ile Ser Ser Leu Thr Ser Phe Arg Ser
            20                  25                  30
Val Leu Asn Cys Tyr Pro Pro Glu Arg Ser Ser Leu Thr Ile Gln Tyr
        35                  40                  45
Gln Ile Leu Leu Leu Leu Leu Gln  *
    50                  55  56
```

<210> 1338
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1338

```
Met Arg Ile Ile Ser Leu Thr Leu Met Leu Leu Glu Leu Phe Asp Ser
 1               5                  10                  15
Glu Asp Pro Arg Gln Arg Glu Tyr Leu Lys Asn Ile Leu His Arg Leu
            20                  25                  30
Tyr Gly Arg Met Leu Gly Leu Arg Pro Tyr Ile His Lys Gln Ser Lys
        35                  40                  45
His Ile Phe Leu Arg Met Ile Tyr Glu Phe  *
    50                  55          58
```

<210> 1339
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1339

```
Met Ile Lys Leu Ala Ile Trp Ser Ile Ile Ile Gly Leu Arg Leu Thr
 1               5                  10                  15
Ile Leu Phe Cys Ile Glu Thr Arg Glu Ser Asp Ile Cys Lys Ile Leu
            20                  25                  30
Gln Tyr Thr Glu Ser Thr Ile Phe Trp Arg Phe Phe Pro Val Tyr Arg
        35                  40                  45
```

Tyr *
49

<210> 1340
<211> 81
<212> PRT
<213> Homo sapiens

<400> 1340
Met Pro Leu Ala Cys Thr Gly Leu Asn Thr Gln Arg Phe Ser Tyr Leu
1 5 10 15
Arg Asp Leu Phe Leu Pro Trp Gly Leu Cys Ile Leu Tyr Ser Ile Leu
20 25 30
Ser Ala Ile Phe Pro Asp Leu Ser Ser Ser Ala Lys Leu Pro Ser Leu
35 40 45
His Ile Ala Phe Phe Thr Leu Phe Lys Val Thr Lys Gly Thr Ser Pro
50 55 60
Lys Ala Thr Asp Val Pro Val Ala Cys Phe Ile Asn His Asn Arg Thr
65 70 75 80
*

<210> 1341
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1341
Met Phe Glu Ile His Arg Ala His Gly Val Phe Leu Leu Leu Ser Ile
1 5 10 15
Gln Leu Thr Thr Ser Leu Lys Arg Lys Ser Gly Glu Gly Asp Arg Glu
20 25 30
Ser Pro Ala Ser Trp Phe Ser Pro Phe Ser Gln Met Phe Phe Leu Ile
35 40 45
Asn Thr Ile Leu Leu Pro Phe Lys Ile Pro Ile *
50 55 59

<210> 1342
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1342
Met Leu Ser Leu Phe Ile Phe Leu Arg Phe Leu Pro Leu Gly Phe Cys
1 5 10 15
Trp Lys Glu Leu His Pro Glu Ala Glu Gln Ser Glu Lys Val Asp Phe
20 25 30
Arg Lys Pro Trp Tyr Leu Thr Gly His Ala Ala Ser Leu Gly Ala Asp
35 40 45 48
*

<210> 1343
<211> 70
<212> PRT
<213> Homo sapiens

<400> 1343
Met Arg Leu Ala Val Ser Cys Ile Thr Ser Phe Leu Met Leu Ser Leu
1 5 10 15
Leu Leu Phe Met Ala His Arg Leu Arg Gln Arg Arg Arg Glu Arg Ile
20 25 30
Glu Ser Leu Ile Gly Ala Asn Leu His His Phe Asn Leu Gly Arg Arg
35 40 45
Ile Pro Gly Phe Asp Tyr Gly Pro Asp Gly Phe Gly Thr Gly Leu Thr
50 55 60
Pro Leu Ala Phe Phe *
65 69

<210> 1344
<211> 99
<212> PRT
<213> Homo sapiens

<400> 1344
Met Phe Leu Ser Leu Ser Leu Thr Leu Cys Leu Cys Phe Ser Phe Phe
1 5 10 15
Cys Leu Tyr Leu Ser Leu Ala Leu Tyr Leu Gly Ser Phe Phe Cys Leu
20 25 30
Pro Phe His Val Ser Val Phe Leu Cys Leu Phe Pro Ser Val Leu Phe
35 40 45
Leu Ser Val Ala Leu Gly Ser Pro Glu Asn His Ile Ser Trp Arg Lys
50 55 60
Val Gly Glu Glu Leu Lys Leu Ala Ser His Arg Asn Phe Cys Ser Leu
65 70 75 80
Met Gln Lys Met Arg Ser Asn Lys Pro Ser Pro Ser Arg Pro Arg Gly
85 90 95
Trp Ala *
98

<210> 1345
<211> 112
<212> PRT
<213> Homo sapiens

<400> 1345
Met Lys Val Leu Trp Ala Gly Val Leu Gly Thr Phe Leu Ala Gly Cys
1 5 10 15
Gln Ala Lys Val Glu Gln Ala Val Glu Thr Glu Pro Glu Pro Glu Leu
20 25 30

Cys Gln Gln Thr Glu Trp Lys Ser Gly Gln Arg Trp Glu Leu Glu Leu
35 40 45
Gly Arg Phe Trp Asp Tyr Leu Arg Trp Glu Gln Thr Leu Ser Glu Gln
50 55 60
Val Gln Glu Glu Leu Val Ser Ser Gln Val Thr Gln Glu Leu Lys Ala
65 70 75 80
Leu Met Asp Glu Thr Met Lys Glu Met Lys Ala Tyr Lys Ser Asp Leu
85 90 95
Glu Glu Gln Leu Thr Pro Val Ala Gly Arg Arg Trp His Gly Cys Thr
100 105 110 112

<210> 1346
<211> 360
<212> PRT
<213> Homo sapiens

<400> 1346
Met Leu Phe Val Pro Val Thr Leu Cys Met Ile Val Val Val Ala Thr
1 5 10 15
Ile Lys Ser Val Arg Phe Tyr Thr Glu Lys Asn Gly Gln Leu Ile Tyr
20 25 30
Thr Pro Phe Thr Glu Asp Thr Pro Ser Val Gly Gln Arg Leu Leu Asn
35 40 45
Ser Val Leu Asn Thr Leu Ile Met Ile Ser Val Ile Val Val Met Thr
50 55 60
Ile Phe Leu Val Val Leu Tyr Lys Tyr Arg Cys Tyr Lys Phe Ile His
65 70 75 80
Gly Trp Leu Ile Met Ser Ser Leu Met Leu Leu Phe Leu Phe Thr Tyr
85 90 95
Ile Tyr Leu Gly Glu Val Leu Lys Thr Tyr Asn Val Ala Met Asp Tyr
100 105 110
Pro Thr Leu Leu Leu Thr Val Trp Asn Phe Gly Ala Val Gly Met Val
115 120 125
Cys Ile His Trp Lys Gly Pro Leu Val Leu Gln Gln Ala Tyr Leu Ile
130 135 140
Met Ile Ser Ala Leu Met Ala Leu Val Phe Ile Lys Tyr Leu Pro Glu
145 150 155 160
Trp Ser Ala Trp Val Ile Leu Gly Ala Ile Ser Val Tyr Asp Leu Val
165 170 175
Ala Val Leu Cys Pro Lys Gly Pro Leu Arg Met Leu Val Glu Thr Ala
180 185 190
Gln Glu Arg Asn Glu Pro Ile Phe Pro Ala Leu Ile Tyr Ser Ser Ala
195 200 205
Met Val Trp Thr Val Gly Met Ala Lys Leu Asp Pro Ser Ser Gln Gly
210 215 220
Ala Leu Gln Leu Pro Tyr Asp Pro Glu Met Glu Glu Asp Ser Tyr Asp
225 230 235 240
Ser Phe Gly Glu Pro Ser Tyr Pro Glu Val Phe Glu Pro Pro Leu Thr
245 250 255
Gly Tyr Pro Gly Glu Glu Leu Glu Glu Glu Glu Glu Arg Gly Val Lys
260 265 270
Leu Gly Leu Gly Asp Phe Ile Phe Tyr Ser Val Leu Val Gly Lys Ala
275 280 285
Ala Ala Thr Gly Ser Gly Asp Trp Asn Thr Thr Leu Ala Cys Phe Val

```
    290                 295                 300
Ala Ile Leu Ile Gly Leu Cys Leu Thr Leu Leu Leu Leu Ala Val Phe
305                 310                 315                 320
Lys Lys Ala Leu Pro Ala Leu Pro Ile Ser Ile Thr Phe Gly Leu Ile
                325                 330                 335
Phe Tyr Phe Ser Thr Asp Asn Leu Val Arg Pro Phe Met Asp Thr Leu
            340                 345                 350
Ala Ser His Gln Leu Tyr Ile  *
        355             359
```

<210> 1347
<211> 84
<212> PRT
<213> Homo sapiens

<400> 1347
```
Met Ile Leu Ser Leu Tyr Tyr Lys Leu Phe Gly Lys Leu Ala Val Ala
 1               5                  10                  15
Thr Ile Glu Ile Leu His Cys Leu Cys Tyr Ile Glu Phe Val Ile Ile
            20                  25                  30
Phe Lys Gly Phe Lys Lys Ile Pro Ile Cys Phe Phe Ser Phe Leu Phe
        35                  40                  45
Ser Phe Val Pro His His Leu Asn Tyr Leu Gly Lys Tyr His Ser Ser
    50                  55                  60
Lys Phe Glu Tyr Cys Leu Ser Asn Lys Lys Lys Cys Glu Arg Tyr Glu
65                  70                  75                  80
Glu Glu Arg  *
        83
```

<210> 1348
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1348
```
Met Val His Leu Leu Leu Val Phe Trp Ser Gly Pro His Asn Leu Gly
 1               5                  10                  15
Arg Phe Gln Pro Met Lys Leu Phe Ala Ile Cys Leu Asn Gln Ser Gly
            20                  25                  30
Tyr Ile Ile Ala Phe Phe Val Leu Tyr Thr Asn Arg Met Tyr Ser Ile
        35                  40                  45
Ile Asn Ile Ile Leu Asn Leu Phe Tyr Pro Val Tyr Tyr Cys Lys Ile
    50                  55                  60                  64
 *
```

<210> 1349
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1349
Met Pro Ser Pro Ser Gly Leu Trp Arg Ile Leu Leu Leu Val Leu Gly
1 5 10 15
Ser Val Leu Ser Gly Ser Ala Arg Ala Ala Ala Pro Leu Arg Val Leu
20 25 30
Arg Gln Thr Ala Leu Cys Cys Ala Thr Glu Ala Leu Val Ala Val Pro
35 40 45
Glu Gly Ile Pro Thr Glu Thr Arg Leu *
50 55 57

<210> 1350
<211> 60
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(60)
<223> Xaa = any amino acid or nothing

<400> 1350
Met Gly Ile Gly Cys Trp Arg Asn Pro Leu Val Leu Leu Met Ala Leu
1 5 10 15
Ala Cys Gln Ala Ser Trp Gly Leu Ser Lys Gly Gly Arg Val Leu Pro
20 25 30
Asn Leu Cys Pro Lys Lys Met Phe Xaa Thr Leu Phe Phe Phe Asn Ser
35 40 45
Gln Arg Gly Arg Gly Pro Pro Phe Trp Ala Gly Gly
50 55 60

<210> 1351
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1351
Met Leu Leu Ala Leu Pro Leu Ala Ala Pro Ser Cys Pro Met Leu Cys
1 5 10 15
Thr Cys Tyr Ser Ser Pro Pro Thr Val Ser Cys Gln Ala Asn Asn Phe
20 25 30
Ser Ser Val Pro Leu Ser Leu Pro Pro Ser Thr Gln Arg Leu Phe Leu
35 40 45
Gln Asn Asn Leu Ile Arg Thr Leu
50 55 56

<210> 1352
<211> 701
<212> PRT
<213> Homo sapiens

<400> 1352

Met Glu Pro Leu Cys Pro Leu Leu Leu Val Gly Phe Ser Leu Pro Leu
1 5 10 15
Ala Arg Ala Leu Arg Gly Asn Glu Thr Thr Ala Asp Ser Asn Glu Thr
20 25 30
Thr Thr Thr Ser Gly Pro Pro Asp Pro Gly Ala Ser Gln Pro Leu Leu
35 40 45
Ala Trp Leu Leu Leu Pro Leu Leu Leu Leu Leu Leu Val Leu Leu Leu
50 55 60
Ala Ala Tyr Phe Phe Arg Phe Arg Lys Gln Arg Lys Ala Val Val Ser
65 70 75 80
Thr Ser Asp Lys Lys Met Pro Asn Gly Ile Leu Glu Glu Gln Glu Gln
85 90 95
Gln Arg Val Met Leu Leu Ser Arg Ser Pro Ser Gly Pro Lys Lys Tyr
100 105 110
Phe Pro Ile Pro Val Glu His Leu Glu Glu Glu Ile Arg Ile Arg Ser
115 120 125
Ala Asp Asp Cys Lys Gln Phe Arg Glu Glu Phe Asn Ser Leu Pro Ser
130 135 140
Gly His Ile Gln Gly Thr Phe Glu Leu Ala Asn Lys Glu Glu Asn Arg
145 150 155 160
Glu Lys Asn Arg Tyr Pro Asn Ile Leu Pro Asn Asp His Ser Arg Val
165 170 175
Ile Leu Ser Gln Leu Asp Gly Ile Pro Cys Ser Asp Tyr Ile Asn Ala
180 185 190
Ser Tyr Ile Asp Gly Tyr Lys Glu Lys Asn Lys Phe Ile Ala Ala Gln
195 200 205
Gly Pro Lys Gln Glu Thr Val Asn Asp Phe Trp Arg Met Val Trp Glu
210 215 220
Gln Lys Ser Ala Thr Ile Val Met Leu Thr Asn Leu Lys Glu Arg Lys
225 230 235 240
Glu Glu Lys Cys His Gln Tyr Trp Pro Asp Gln Gly Cys Trp Thr Tyr
245 250 255
Gly Asn Ile Arg Val Cys Val Glu Asp Cys Val Val Leu Val Asp Tyr
260 265 270
Thr Ile Arg Lys Phe Cys Ile Gln Pro Gln Leu Pro Asp Gly Cys Lys
275 280 285
Ala Pro Arg Leu Val Ser Gln Leu His Phe Thr Ser Trp Pro Asp Phe
290 295 300
Gly Val Pro Phe Thr Pro Ile Gly Met Leu Lys Phe Leu Lys Lys Val
305 310 315 320
Lys Thr Leu Asn Pro Val His Ala Gly Pro Ile Val Val His Cys Ser
325 330 335
Ala Gly Val Gly Arg Thr Gly Thr Phe Ile Val Ile Asp Ala Met Met
340 345 350
Ala Met Met His Ala Glu Gln Lys Val Asp Val Phe Glu Phe Val Ser
355 360 365
Arg Ile Arg Asn Gln Arg Pro Gln Met Val Gln Thr Asp Met Gln Tyr
370 375 380
Thr Phe Ile Tyr Gln Ala Leu Leu Glu Tyr Tyr Leu Tyr Gly Asp Thr
385 390 395 400
Glu Leu Asp Val Ser Ser Leu Glu Lys His Leu Gln Thr Met His Gly
405 410 415
Thr Thr Thr His Phe Asp Lys Ile Gly Leu Glu Glu Glu Phe Arg Lys
420 425 430
Leu Thr Asn Val Arg Ile Met Lys Glu Asn Met Arg Thr Gly Asn Leu
435 440 445
Pro Ala Asn Met Lys Lys Ala Arg Val Ile Gln Ile Ile Pro Tyr Asp
450 455 460

Phe Asn Arg Val Ile Leu Ser Met Lys Arg Gly Gln Glu Tyr Thr Asp
465 470 475 480
Tyr Ile Asn Ala Ser Phe Ile Asp Gly Tyr Arg Gln Lys Asp Tyr Phe
485 490 495
Ile Ala Thr Gln Gly Pro Leu Ala His Thr Val Glu Asp Phe Trp Arg
500 505 510
Met Ile Trp Glu Trp Lys Ser His Thr Ile Val Met Leu Thr Glu Val
515 520 525
Gln Glu Arg Glu Gln Asp Lys Cys Tyr Gln Tyr Trp Pro Thr Glu Gly
530 535 540
Ser Val Thr His Gly Glu Ile Thr Ile Glu Ile Lys Asn Asp Thr Leu
545 550 555 560
Ser Glu Ala Ile Ser Ile Arg Asp Phe Leu Val Thr Leu Asn Gln Pro
565 570 575
Gln Ala Arg Gln Glu Glu Gln Val Arg Val Val Arg Gln Phe His Phe
580 585 590
His Gly Trp Pro Glu Ile Gly Ile Pro Ala Glu Gly Lys Gly Met Ile
595 600 605
Asp Leu Ile Ala Ala Val Gln Lys Gln Gln Gln Gln Thr Gly Asn His
610 615 620
Pro Ile Thr Val His Cys Ser Ala Gly Ala Gly Arg Thr Gly Thr Phe
625 630 635 640
Ile Ala Leu Ser Asn Ile Leu Glu Arg Val Lys Ala Glu Gly Leu Leu
645 650 655
Asp Val Phe Gln Ala Val Lys Ser Leu Arg Leu Gln Arg Pro His Met
660 665 670
Val Gln Thr Leu Glu Gln Tyr Glu Phe Cys Tyr Lys Val Val Gln Asp
675 680 685
Phe Ile Asp Ile Phe Ser Asp Tyr Ala Asn Phe Lys *
690 695 700

<210> 1353
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1353
Met Ala Phe Leu Tyr His Val Ala Tyr Val Leu Val Cys Met Leu Gly
1 5 10 15
Leu Phe Cys His Glu Phe Phe Tyr Ser Phe Leu Leu Phe Glu Ser Val
20 25 30
Tyr Arg His Gln Thr Leu Leu Asn Asp Ile Pro Cys Val Lys Leu Met
35 40 45 48
*

<210> 1354
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1354
Met Ser Val Cys Lys Tyr Thr Val Tyr Gly Phe Phe Ile Phe Ala Phe

```
 1               5                  10                  15
Phe Tyr Phe Thr Lys Asp Asn Ile Pro Tyr Leu Lys Val Ser Leu Gln
            20                  25                  30
Ala Phe Cys Gly Phe Gln Asn Ile Ser Trp Asn Lys Tyr Thr Leu Leu
        35                  40                  45
Phe Tyr Tyr Ser Pro Leu Thr Ile Ile  *
    50                  55      57
```

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     <210> 1355
     <211> 4261
     <212> PRT
     <213> Homo sapiens


     <400> 1355
Met Leu Ser Ala Ile Leu Leu Leu Leu Gln Leu Trp Asp Ser Gly Ala
 1               5                  10                  15
Gln Glu Thr Asp Asn Glu Arg Ser Ala Gln Gly Thr Ser Ala Pro Leu
            20                  25                  30
Leu Pro Leu Leu Gln Arg Phe Gln Ser Ile Ile Cys Arg Lys Asp Ala
        35                  40                  45
Pro His Ser Glu Gly Asp Met His Leu Leu Ser Gly Pro Leu Ser Pro
    50                  55                  60
Asn Glu Ser Phe Leu Arg Tyr Leu Thr Leu Pro Gln Asp Asn Glu Leu
65                  70                  75                  80
Ala Ile Asp Leu Arg Gln Thr Ala Val Val Val Met Ala His Leu Asp
                85                  90                  95
Arg Leu Ala Thr Pro Cys Met Pro Pro Leu Cys Ser Ser Pro Thr Ser
            100                 105                 110
His Lys Gly Ser Leu Gln Glu Val Ile Gly Trp Gly Leu Ile Gly Trp
        115                 120                 125
Lys Tyr Tyr Ala Asn Val Ile Gly Pro Ile Gln Cys Glu Gly Leu Ala
    130                 135                 140
Asn Leu Gly Val Thr Gln Ile Ala Cys Ala Glu Lys Arg Phe Leu Ile
145                 150                 155                 160
Leu Ser Arg Asn Gly Arg Val Tyr Thr Gln Ala Tyr Asn Ser Asp Thr
                165                 170                 175
Leu Ala Pro Gln Leu Val Gln Gly Leu Ala Ser Arg Asn Ile Val Lys
            180                 185                 190
Ile Ala Ala His Ser Asp Gly His His Tyr Leu Ala Leu Ala Ala Thr
        195                 200                 205
Gly Glu Val Tyr Ser Trp Gly Cys Gly Asp Gly Gly Arg Leu Gly His
    210                 215                 220
Gly Asp Thr Val Pro Leu Glu Glu Pro Lys Val Ile Ser Ala Phe Ser
225                 230                 235                 240
Gly Lys Gln Ala Gly Lys His Val Val His Ile Ala Cys Gly Ser Thr
                245                 250                 255
Tyr Ser Ala Ala Ile Thr Ala Glu Gly Glu Leu Tyr Thr Trp Gly Arg
            260                 265                 270
Gly Asn Tyr Gly Arg Leu Gly His Gly Ser Ser Glu Asp Glu Ala Ile
        275                 280                 285
Pro Met Leu Val Ala Gly Leu Lys Gly Leu Lys Val Ile Asp Val Ala
    290                 295                 300
Cys Gly Ser Gly Asp Ala Gln Thr Leu Ala Val Thr Glu Asn Gly Gln
305                 310                 315                 320
Val Trp Ser Trp Gly Asp Gly Asp Tyr Gly Lys Leu Gly Arg Gly Gly
                325                 330                 335
```

Ser Asp Gly Cys Lys Thr Pro Lys Leu Ile Glu Lys Leu Gln Asp Leu
340 345 350
Asp Val Val Lys Val Arg Cys Gly Ser Gln Phe Ser Ile Ala Leu Thr
355 360 365
Lys Asp Gly Gln Val Tyr Ser Trp Gly Lys Gly Asp Asn Gln Arg Leu
370 375 380
Gly His Gly Thr Glu Glu His Val Arg Tyr Pro Lys Leu Leu Glu Gly
385 390 395 400
Leu Gln Gly Lys Lys Val Ile Asp Val Ala Ala Gly Ser Thr His Cys
405 410 415
Leu Ala Leu Thr Glu Asp Ser Glu Val His Ser Trp Gly Ser Asn Asp
420 425 430
Gln Cys Gln His Phe Asp Thr Leu Arg Val Thr Lys Pro Glu Pro Ala
435 440 445
Ala Leu Pro Gly Leu Asp Thr Lys His Ile Val Gly Ile Ala Cys Gly
450 455 460
Pro Ala Gln Ser Phe Ala Trp Ser Ser Cys Ser Glu Trp Ser Ile Gly
465 470 475 480
Leu Arg Val Pro Phe Val Val Asp Ile Cys Ser Met Thr Phe Glu Gln
485 490 495
Leu Asp Leu Leu Leu Arg Gln Val Ser Glu Gly Met Asp Gly Ser Ala
500 505 510
Asp Trp Pro Pro Pro Gln Glu Lys Glu Cys Val Ala Val Ala Thr Leu
515 520 525
Asn Leu Leu Arg Leu Gln Leu His Ala Ala Ile Ser His Gln Val Asp
530 535 540
Pro Glu Phe Leu Gly Leu Gly Leu Gly Ser Ile Leu Leu Asn Ser Leu
545 550 555 560
Lys Gln Thr Val Val Thr Leu Ala Ser Ser Ala Gly Val Leu Ser Thr
565 570 575
Val Gln Ser Ala Ala Gln Ala Val Leu Gln Ser Gly Trp Ser Val Leu
580 585 590
Leu Pro Thr Ala Glu Glu Arg Ala Arg Ala Leu Ser Ala Leu Leu Pro
595 600 605
Cys Ala Val Ser Gly Asn Glu Val Asn Ile Ser Pro Gly Arg Arg Phe
610 615 620
Met Ile Asp Leu Leu Val Gly Ser Leu Met Ala Asp Gly Gly Leu Glu
625 630 635 640
Ser Ala Leu His Ala Ala Ile Thr Ala Glu Ile Gln Asp Ile Glu Ala
645 650 655
Lys Lys Glu Ala Gln Lys Glu Lys Glu Ile Asp Glu Gln Glu Ala Asn
660 665 670
Ala Ser Thr Phe His Arg Ser Arg Thr Pro Leu Asp Lys Asp Leu Ile
675 680 685
Asn Thr Gly Ile Cys Glu Ser Ser Gly Lys Gln Cys Leu Pro Leu Val
690 695 700
Gln Leu Ile Gln Gln Leu Leu Arg Asn Ile Ala Ser Gln Thr Val Ala
705 710 715 720
Arg Leu Lys Asp Val Ala Arg Arg Ile Ser Ser Cys Leu Asp Phe Glu
725 730 735
Gln His Ser Arg Glu Arg Ser Ala Ser Leu Asp Trp Leu Leu Arg Phe
740 745 750
Gln Arg Leu Leu Ile Ser Lys Leu Tyr Pro Gly Glu Ser Ile Gly Gln
755 760 765
Thr Ser Asp Ile Ser Ser Pro Glu Leu Met Gly Val Gly Ser Leu Leu
770 775 780
Lys Lys Tyr Thr Ala Leu Leu Cys Thr His Ile Gly Asp Ile Leu Pro
785 790 795 800
Val Ala Ala Ser Ile Ala Ser Thr Ser Trp Arg His Phe Ala Glu Val

805 810 815
Ala Tyr Ile Val Glu Gly Asp Phe Thr Gly Val Leu Leu Pro Glu Leu
820 825 830
Val Val Ser Ile Val Leu Leu Leu Ser Lys Asn Ala Asp Leu Met Gln
835 840 845
Glu Ala Gly Ala Val Pro Leu Leu Gly Gly Leu Leu Glu His Leu Asp
850 855 860
Arg Phe Asn His Leu Ala Pro Gly Lys Glu Arg Asp Asp His Glu Glu
865 870 875 880
Leu Ala Trp Pro Gly Ile Met Glu Ser Phe Phe Thr Gly Gln Asn Cys
885 890 895
Arg Asn Asn Glu Glu Val Thr Leu Ile Arg Lys Ala Asp Leu Glu Asn
900 905 910
His Asn Lys Asp Gly Gly Phe Trp Thr Val Ile Asp Gly Lys Val Tyr
915 920 925
Asp Ile Lys Asp Phe Gln Thr Gln Ser Leu Thr Gly Asn Ser Ile Leu
930 935 940
Ala Gln Phe Ala Gly Glu Asp Pro Val Val Ala Leu Glu Ala Ala Leu
945 950 955 960
Gln Phe Glu Asp Thr Arg Glu Ser Met His Ala Phe Cys Val Gly Gln
965 970 975
Tyr Leu Glu Pro Asp Gln Glu Ile Val Thr Ile Pro Asp Leu Gly Ser
980 985 990
Leu Ser Ser Pro Leu Ile Asp Thr Glu Arg Asn Leu Gly Leu Leu Leu
995 1000 1005
Gly Leu His Ala Ser Tyr Leu Ala Met Ser Thr Pro Leu Ser Pro Val
1010 1015 1020
Glu Ile Glu Cys Ala Lys Trp Leu Gln Ser Ser Ile Phe Ser Gly Gly
1025 1030 1035 1040
Leu Gln Thr Ser Gln Ile His Tyr Arg Tyr Asn Glu Glu Lys Asp Glu
1045 1050 1055
Asp His Cys Ser Ser Pro Gly Gly Thr Pro Ala Ser Lys Ser Arg Leu
1060 1065 1070
Cys Ser His Arg Arg Ala Leu Gly Asp His Ser Gln Ala Phe Leu Gln
1075 1080 1085
Ala Ile Ala Asp Asn Asn Ile Gln Asp His Asn Val Lys Asp Phe Leu
1090 1095 1100
Cys Gln Ile Glu Arg Tyr Cys Arg Gln Cys His Leu Thr Thr Pro Ile
1105 1110 1115 1120
Met Phe Pro Pro Glu His Pro Val Glu Glu Val Gly Arg Leu Leu Leu
1125 1130 1135
Cys Cys Leu Leu Lys His Glu Asp Leu Gly His Val Ala Leu Ser Leu
1140 1145 1150
Val His Ala Gly Ala Leu Gly Ile Glu Gln Val Lys His Arg Thr Leu
1155 1160 1165
Pro Lys Ser Val Val Asp Val Cys Arg Val Val Tyr Gln Ala Lys Cys
1170 1175 1180
Ser Leu Ile Lys Thr His Gln Glu Gln Gly Arg Ser Tyr Lys Glu Val
1185 1190 1195 1200
Cys Ala Pro Val Ile Glu Arg Leu Arg Phe Leu Phe Asn Glu Leu Arg
1205 1210 1215
Pro Ala Val Cys Asn Asp Leu Ser Ile Met Ser Lys Phe Lys Leu Leu
1220 1225 1230
Ser Ser Leu Pro Arg Trp Arg Arg Ile Ala Gln Lys Ile Ile Arg Glu
1235 1240 1245
Arg Arg Lys Lys Arg Val Pro Lys Lys Pro Glu Ser Met Asp Asp Glu
1250 1255 1260
Glu Lys Ile Gly Asn Glu Glu Ser Asp Leu Glu Glu Ala Cys Ile Leu
1265 1270 1275 1280

Pro His Ser Pro Ile Asn Val Asp Lys Arg Pro Ile Ala Ile Lys Ser
1285 1290 1295
Pro Lys Asp Lys Trp Gln Pro Leu Leu Ser Thr Val Thr Gly Val His
1300 1305 1310
Lys Tyr Lys Trp Leu Lys Gln Asn Val Gln Gly Leu Tyr Pro Gln Ser
1315 1320 1325
Pro Leu Leu Ser Thr Ile Ala Glu Phe Ala Leu Lys Glu Glu Pro Val
1330 1335 1340
Asp Val Glu Lys Met Arg Lys Cys Leu Leu Lys Gln Leu Glu Arg Ala
1345 1350 1355 1360
Glu Val Arg Leu Glu Gly Ile Asp Thr Ile Leu Lys Leu Ala Ser Lys
1365 1370 1375
Asn Phe Leu Leu Pro Ser Val Gln Tyr Ala Met Phe Cys Gly Trp Gln
1380 1385 1390
Arg Leu Ile Pro Glu Gly Ile Asp Ile Gly Glu Pro Leu Thr Asp Cys
1395 1400 1405
Leu Lys Asp Val Asp Leu Ile Pro Pro Phe Asn Arg Met Leu Leu Glu
1410 1415 1420
Val Thr Phe Gly Lys Leu Tyr Ala Trp Ala Val Gln Asn Ile Arg Asn
1425 1430 1435 1440
Val Leu Met Asp Ala Ser Ala Thr Phe Lys Glu Leu Gly Ile Gln Pro
1445 1450 1455
Val Pro Leu Gln Thr Ile Thr Asn Glu Asn Pro Ser Gly Pro Ser Leu
1460 1465 1470
Gly Thr Ile Pro Gln Ala Arg Phe Leu Leu Val Met Leu Ser Met Leu
1475 1480 1485
Thr Leu Gln His Gly Ala Asn Asn Leu Asp Leu Leu Leu Asn Ser Gly
1490 1495 1500
Met Leu Ala Leu Thr Gln Thr Ala Leu Arg Leu Ile Gly Pro Ser Cys
1505 1510 1515 1520
Asp Asn Val Glu Glu Asp Met Asn Ala Ser Ala Gln Gly Ala Ser Ala
1525 1530 1535
Thr Val Leu Glu Glu Thr Arg Lys Glu Thr Ala Pro Val Gln Leu Pro
1540 1545 1550
Val Ser Gly Pro Glu Leu Ala Ala Met Met Lys Ile Gly Thr Arg Val
1555 1560 1565
Met Arg Gly Val Asp Trp Lys Trp Gly Asp Gln Asp Gly Pro Pro Pro
1570 1575 1580
Gly Leu Gly Arg Val Ile Gly Glu Leu Gly Glu Asp Gly Trp Ile Arg
1585 1590 1595 1600
Val Gln Trp Asp Thr Gly Ser Thr Asn Ser Tyr Arg Met Gly Lys Glu
1605 1610 1615
Gly Lys Tyr Asp Leu Lys Leu Ala Glu Leu Pro Ala Ala Ala Gln Pro
1620 1625 1630
Ser Ala Glu Asp Ser Asp Thr Glu Asp Asp Ser Glu Ala Glu Gln Thr
1635 1640 1645
Glu Arg Asn Ile His Pro Thr Ala Met Met Phe Thr Ser Thr Ile Asn
1650 1655 1660
Leu Leu Gln Thr Leu Cys Leu Ser Ala Gly Val His Ala Glu Ile Met
1665 1670 1675 1680
Gln Ser Glu Ala Thr Lys Thr Leu Cys Gly Leu Leu Arg Met Leu Val
1685 1690 1695
Glu Ser Gly Thr Thr Asp Lys Thr Ser Ser Pro Asn Arg Leu Val Tyr
1700 1705 1710
Arg Glu Gln His Arg Ser Trp Cys Thr Leu Gly Phe Val Arg Ser Ile
1715 1720 1725
Ala Leu Thr Pro Gln Val Cys Gly Ala Leu Ser Ser Pro Gln Trp Ile
1730 1735 1740
Thr Leu Leu Met Lys Val Val Glu Gly His Ala Pro Phe Thr Ala Thr

1745 1750 1755 1760
Ser Leu Gln Arg Gln Ile Leu Ala Val His Leu Leu Gln Ala Val Leu
1765 1770 1775
Pro Ser Trp Asp Lys Thr Glu Arg Ala Arg Asp Met Lys Cys Leu Val
1780 1785 1790
Glu Lys Leu Phe Asp Phe Leu Gly Ser Leu Leu Thr Thr Cys Ser Ser
1795 1800 1805
Asp Val Pro Leu Leu Arg Glu Ser Thr Leu Arg Arg Arg Arg Val Arg
1810 1815 1820
Pro Gln Ala Ser Leu Thr Ala Thr His Ser Ser Thr Leu Ala Glu Glu
1825 1830 1835 1840
Val Val Ala Leu Leu Arg Thr Leu His Ser Leu Thr Gln Trp Asn Gly
1845 1850 1855
Leu Ile Asn Lys Tyr Ile Asn Ser Gln Leu Arg Ser Ile Thr His Ser
1860 1865 1870
Phe Val Gly Arg Pro Ser Glu Gly Ala Gln Leu Glu Asp Tyr Phe Pro
1875 1880 1885
Asp Ser Glu Asn Pro Glu Val Gly Gly Leu Met Ala Val Leu Ala Val
1890 1895 1900
Ile Gly Gly Ile Asp Gly Arg Leu Arg Leu Gly Gly Gln Val Met His
1905 1910 1915 1920
Asp Glu Phe Gly Glu Gly Thr Val Thr Arg Ile Thr Pro Lys Gly Lys
1925 1930 1935
Ile Thr Val Gln Phe Ser Asp Met Arg Thr Cys Arg Val Cys Pro Leu
1940 1945 1950
Asn Gln Leu Lys Pro Leu Pro Ala Val Ala Phe Asn Val Asn Asn Leu
1955 1960 1965
Pro Phe Thr Glu Pro Met Leu Ser Val Trp Ala Gln Leu Val Asn Leu
1970 1975 1980
Ala Gly Ser Lys Leu Glu Lys His Lys Ile Lys Lys Ser Thr Lys Gln
1985 1990 1995 2000
Ala Phe Ala Gly Gln Val Asp Leu Asp Leu Leu Arg Cys Gln Gln Leu
2005 2010 2015
Lys Leu Tyr Ile Leu Lys Ala Gly Arg Ala Leu Leu Ser His Gln Asp
2020 2025 2030
Lys Leu Arg Gln Ile Leu Ser Gln Pro Ala Val Gln Glu Thr Gly Thr
2035 2040 2045
Val His Thr Asp Asp Gly Ala Val Val Ser Pro Asp Leu Gly Asp Met
2050 2055 2060
Ser Pro Glu Gly Pro Gln Pro Pro Met Ile Leu Leu Gln Gln Leu Leu
2065 2070 2075 2080
Ala Ser Ala Thr Gln Pro Ser Pro Val Lys Ala Ile Phe Asp Lys Gln
2085 2090 2095
Glu Leu Glu Ala Ala Ala Leu Ala Val Cys Gln Cys Leu Ala Val Glu
2100 2105 2110
Ser Thr His Pro Ser Ser Pro Gly Phe Glu Asp Cys Ser Ser Ser Glu
2115 2120 2125
Ala Thr Thr Pro Val Ala Val Gln His Ile His Pro Ala Arg Val Lys
2130 2135 2140
Arg Arg Lys Gln Ser Pro Val Pro Ala Leu Pro Ile Val Val Gln Leu
2145 2150 2155 2160
Met Glu Met Gly Phe Ser Arg Arg Asn Ile Glu Phe Ala Leu Lys Ser
2165 2170 2175
Leu Thr Gly Ala Ser Gly Asn Ala Ser Ser Leu Pro Gly Val Glu Ala
2180 2185 2190
Leu Val Gly Trp Leu Leu Asp His Ser Asp Ile Gln Val Thr Glu Leu
2195 2200 2205
Ser Asp Ala Asp Thr Val Ser Asp Glu Tyr Ser Asp Glu Glu Val Val
2210 2215 2220

Glu Asp Val Asp Asp Ala Ala Tyr Ser Met Ser Thr Gly Ala Val Val
2225 2230 2235 2240
Thr Glu Ser Gln Thr Tyr Lys Lys Arg Ala Asp Phe Leu Ser Asn Asp
2245 2250 2255
Asp Tyr Ala Val Tyr Val Arg Glu Asn Ile Gln Val Gly Met Met Val
2260 2265 2270
Arg Cys Cys Arg Ala Tyr Glu Glu Val Cys Glu Gly Asp Val Gly Lys
2275 2280 2285
Val Ile Lys Leu Asp Arg Asp Gly Leu His Asp Leu Asn Val Gln Cys
2290 2295 2300
Asp Trp Gln Gln Lys Gly Gly Thr Tyr Trp Val Arg Tyr Ile His Val
2305 2310 2315 2320
Glu Leu Ile Gly Tyr Pro Pro Pro Ser Ser Ser Ser His Ile Lys Ile
2325 2330 2335
Gly Asp Lys Val Arg Val Lys Ala Ser Val Thr Thr Pro Lys Tyr Lys
2340 2345 2350
Trp Gly Ser Val Thr His Gln Ser Val Gly Val Val Lys Ala Phe Ser
2355 2360 2365
Ala Asn Gly Lys Asp Ile Ile Val Asp Phe Pro Gln Gln Ser His Trp
2370 2375 2380
Thr Gly Leu Leu Ser Glu Met Glu Leu Val Pro Ser Ile His Pro Gly
2385 2390 2395 2400
Val Thr Cys Asp Gly Cys Gln Met Phe Pro Ile Asn Gly Ser Arg Phe
2405 2410 2415
Lys Cys Arg Asn Cys Asp Asp Phe Asp Phe Cys Glu Thr Cys Phe Lys
2420 2425 2430
Thr Lys Lys His Asn Thr Arg His Thr Phe Gly Arg Ile Asn Glu Pro
2435 2440 2445
Gly Gln Ser Ala Val Phe Cys Gly Arg Ser Gly Lys Gln Leu Lys Arg
2450 2455 2460
Cys His Ser Ser Gln Pro Gly Met Leu Leu Asp Ser Trp Ser Arg Met
2465 2470 2475 2480
Val Lys Ser Leu Asn Val Ser Ser Ser Val Asn Gln Ala Ser Arg Leu
2485 2490 2495
Ile Asp Gly Ser Glu Pro Cys Trp Gln Ser Ser Gly Ser Gln Gly Lys
2500 2505 2510
His Trp Ile Arg Leu Glu Ile Phe Pro Asp Val Leu Val His Arg Leu
2515 2520 2525
Lys Met Ile Val Asp Pro Ala Asp Ser Ser Tyr Met Pro Ser Leu Val
2530 2535 2540
Val Val Ser Gly Gly Asn Ser Leu Asn Asn Leu Ile Glu Leu Lys Thr
2545 2550 2555 2560
Ile Asn Ile Asn Pro Ser Asp Thr Thr Val Pro Leu Leu Asn Asp Tyr
2565 2570 2575
Thr Glu Tyr His Arg Tyr Ile Glu Ile Ala Ile Lys Gln Cys Arg Ser
2580 2585 2590
Ser Gly Ile Asp Cys Lys Ile His Gly Leu Ile Leu Leu Gly Arg Ile
2595 2600 2605
Arg Ala Glu Glu Glu Asp Leu Ala Ala Val Pro Phe Leu Ala Ser Asp
2610 2615 2620
Asn Glu Glu Glu Glu Asp Glu Lys Gly Asn Ser Gly Ser Leu Ile Arg
2625 2630 2635 2640
Lys Lys Ala Ala Gly Leu Glu Ser Ala Ala Thr Ile Arg Thr Lys Val
2645 2650 2655
Phe Val Trp Gly Leu Asn Asp Lys Asp Gln Leu Gly Gly Leu Lys Gly
2660 2665 2670
Ser Lys Ile Lys Val Pro Ser Phe Ser Glu Thr Leu Ser Ala Leu Asn
2675 2680 2685
Val Val Gln Val Ala Gly Gly Ser Lys Ser Leu Phe Ala Val Thr Val

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    2690                2695                2700
Glu Gly Lys Val Tyr Ala Cys Gly Glu Ala Thr Asn Gly Arg Leu Gly
2705                2710                2715                2720
Leu Gly Ile Ser Ser Gly Thr Val Pro Ile Pro Arg Gln Ile Thr Ala
                2725                2730                2735
Leu Ser Ser Tyr Val Val Lys Lys Val Ala Val His Ser Gly Gly Arg
            2740                2745                2750
His Ala Thr Ala Leu Thr Val Asp Gly Lys Val Phe Ser Trp Gly Glu
        2755                2760                2765
Gly Asp Asp Gly Lys Leu Gly His Phe Ser Arg Met Asn Cys Asp Lys
    2770                2775                2780
Pro Arg Leu Ile Glu Ala Leu Lys Thr Lys Arg Ile Arg Asp Ile Ala
2785                2790                2795                2800
Cys Gly Ser Ser His Ser Ala Ala Leu Thr Ser Ser Gly Glu Leu Tyr
                2805                2810                2815
Thr Trp Gly Leu Gly Glu Tyr Gly Arg Leu Gly His Gly Asp Asn Thr
            2820                2825                2830
Thr Gln Leu Lys Pro Lys Met Val Lys Val Leu Leu Gly His Arg Val
        2835                2840                2845
Ile Gln Val Ala Cys Gly Ser Arg Asp Ala Gln Thr Leu Ala Leu Thr
    2850                2855                2860
Asp Glu Gly Leu Val Phe Ser Trp Gly Asp Gly Asp Phe Gly Lys Leu
2865                2870                2875                2880
Gly Arg Gly Gly Ser Glu Gly Cys Asn Ile Pro Gln Asn Ile Glu Arg
                2885                2890                2895
Leu Asn Gly Gln Gly Val Cys Gln Ile Glu Cys Gly Ala Gln Phe Ser
            2900                2905                2910
Leu Ala Leu Thr Lys Ser Gly Val Val Trp Thr Trp Gly Lys Gly Asp
        2915                2920                2925
Tyr Phe Arg Leu Gly His Gly Ser Asp Val His Val Arg Lys Pro Gln
    2930                2935                2940
Val Val Glu Gly Leu Arg Gly Lys Lys Ile Val His Val Ala Val Gly
2945                2950                2955                2960
Ala Leu His Cys Leu Ala Val Thr Asp Ser Gly Gln Val Tyr Ala Trp
                2965                2970                2975
Gly Asp Asn Asp His Gly Gln Gln Gly Asn Gly Thr Thr Thr Val Asn
            2980                2985                2990
Arg Lys Pro Thr Leu Val Gln Gly Leu Glu Gly Gln Lys Ile Thr Arg
        2995                3000                3005
Val Ala Cys Gly Ser Ser His Ser Val Ala Trp Thr Thr Val Asp Val
    3010                3015                3020
Ala Thr Pro Ser Val His Glu Pro Val Leu Phe Gln Thr Ala Arg Asp
3025                3030                3035                3040
Pro Leu Gly Ala Ser Tyr Leu Gly Val Pro Ser Asp Ala Asp Ser Ser
                3045                3050                3055
Ala Ala Ser Asn Lys Ile Ser Gly Ala Ser Asn Ser Lys Pro Asn Arg
            3060                3065                3070
Pro Ser Leu Ala Lys Ile Leu Leu Ser Leu Asp Gly Asn Leu Ala Lys
        3075                3080                3085
Gln Gln Ala Leu Ser His Ile Leu Thr Ala Leu Gln Ile Met Tyr Ala
    3090                3095                3100
Arg Asp Ala Val Val Gly Ala Leu Met Pro Ala Ala Met Ile Ala Pro
3105                3110                3115                3120
Val Glu Cys Pro Ser Phe Ser Ser Ala Ala Pro Ser Asp Ala Ser Ala
                3125                3130                3135
Met Ala Ser Pro Met Asn Gly Glu Glu Cys Met Leu Ala Val Asp Ile
            3140                3145                3150
Glu Asp Arg Leu Ser Pro Asn Pro Trp Gln Glu Lys Arg Glu Ile Val
        3155                3160                3165
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Ser Ser Glu Asp Ala Val Thr Pro Ser Ala Val Thr Pro Ser Ala Pro
3170 3175 3180
Ser Ala Ser Ala Arg Pro Phe Ile Pro Val Thr Asp Asp Leu Gly Ala
3185 3190 3195 3200
Ala Ser Ile Ile Ala Glu Thr Met Thr Lys Thr Lys Glu Asp Val Glu
3205 3210 3215
Ser Gln Asn Lys Ala Ala Gly Pro Glu Pro Gln Ala Leu Asp Glu Phe
3220 3225 3230
Thr Ser Leu Leu Ile Ala Asp Asp Thr Arg Val Val Val Asp Leu Leu
3235 3240 3245
Lys Leu Ser Val Cys Ser Arg Ala Gly Asp Arg Gly Arg Asp Val Leu
3250 3255 3260
Ser Ala Val Leu Ser Gly Met Gly Thr Ala Tyr Pro Gln Val Ala Asp
3265 3270 3275 3280
Met Leu Leu Glu Leu Cys Val Thr Glu Leu Glu Asp Val Ala Thr Asp
3285 3290 3295
Ser Gln Ser Gly Arg Leu Ser Ser Gln Pro Val Val Val Glu Ser Ser
3300 3305 3310
His Pro Tyr Thr Asp Asp Thr Ser Thr Ser Gly Thr Val Lys Ile Pro
3315 3320 3325
Gly Ala Glu Gly Leu Arg Val Glu Phe Asp Arg Gln Cys Ser Thr Glu
3330 3335 3340
Arg Arg His Asp Pro Leu Thr Val Met Asp Gly Val Asn Arg Ile Val
3345 3350 3355 3360
Ser Val Arg Ser Gly Arg Glu Trp Ser Asp Trp Ser Ser Glu Leu Arg
3365 3370 3375
Ile Pro Gly Asp Glu Leu Lys Trp Lys Phe Ile Ser Asp Gly Ser Val
3380 3385 3390
Asn Gly Trp Gly Trp Arg Phe Thr Val Tyr Pro Ile Met Pro Ala Ala
3395 3400 3405
Gly Pro Lys Glu Leu Leu Ser Asp Arg Cys Val Leu Ser Cys Pro Ser
3410 3415 3420
Met Asp Leu Val Thr Cys Leu Leu Asp Phe Arg Leu Asn Leu Ala Ser
3425 3430 3435 3440
Asn Arg Ser Ile Val Pro Arg Leu Ala Ala Ser Leu Ala Ala Cys Ala
3445 3450 3455
Gln Leu Ser Ala Leu Ala Ala Ser His Arg Met Trp Ala Leu Gln Arg
3460 3465 3470
Leu Arg Lys Leu Leu Thr Thr Glu Phe Gly Gln Ser Ile Asn Ile Asn
3475 3480 3485
Arg Leu Leu Gly Glu Asn Asp Gly Glu Thr Arg Ala Leu Ser Phe Thr
3490 3495 3500
Gly Ser Ala Leu Ala Ala Leu Val Lys Gly Leu Pro Glu Ala Leu Gln
3505 3510 3515 3520
Arg Gln Phe Glu Tyr Glu Asp Pro Ile Val Arg Gly Gly Lys Gln Leu
3525 3530 3535
Leu His Ser Pro Phe Phe Lys Val Leu Val Ala Leu Ala Cys Asp Leu
3540 3545 3550
Glu Leu Asp Thr Leu Pro Cys Cys Ala Glu Thr His Lys Trp Ala Trp
3555 3560 3565
Phe Arg Arg Tyr Cys Met Ala Ser Arg Val Ala Val Ala Leu Asp Lys
3570 3575 3580
Arg Thr Pro Leu Pro Arg Leu Phe Leu Asp Glu Val Ala Lys Lys Ile
3585 3590 3595 3600
Arg Glu Leu Met Ala Asp Ser Glu Asn Met Asp Val Leu His Glu Ser
3605 3610 3615
His Asp Ile Phe Lys Arg Glu Gln Asp Glu Gln Leu Val Gln Trp Met
3620 3625 3630
Asn Arg Arg Pro Asp Asp Trp Thr Leu Ser Ala Gly Gly Ser Gly Thr

3635 3640 3645
Ile Tyr Gly Trp Gly His Asn His Arg Gly Gln Leu Gly Gly Ile Glu
3650 3655 3660
Gly Ala Lys Val Lys Val Pro Thr Pro Cys Glu Ala Leu Ala Thr Leu
3665 3670 3675 3680
Arg Pro Val Gln Leu Ile Gly Gly Glu Gln Thr Leu Phe Ala Val Thr
3685 3690 3695
Ala Asp Gly Lys Leu Tyr Ala Thr Gly Tyr Gly Ala Gly Gly Arg Leu
3700 3705 3710
Gly Ile Gly Gly Thr Glu Ser Val Ser Thr Pro Thr Leu Leu Glu Ser
3715 3720 3725
Ile Gln His Val Phe Ile Lys Lys Val Ala Val Asn Ser Gly Gly Lys
3730 3735 3740
His Cys Leu Ala Leu Ser Ser Glu Gly Glu Val Tyr Ser Trp Gly Glu
3745 3750 3755 3760
Ala Glu Asp Gly Lys Leu Gly His Gly Asn Arg Ser Pro Cys Asp Arg
3765 3770 3775
Pro Arg Val Ile Glu Ser Leu Arg Gly Ile Glu Val Val Asp Val Ala
3780 3785 3790
Ala Gly Gly Ala His Ser Ala Cys Val Thr Ala Ala Gly Asp Leu Tyr
3795 3800 3805
Thr Trp Gly Lys Gly Arg Tyr Gly Arg Leu Gly His Ser Asp Ser Glu
3810 3815 3820
Asp Gln Leu Lys Pro Lys Leu Val Glu Ala Leu Gln Gly His Arg Val
3825 3830 3835 3840
Val Asp Ile Ala Cys Gly Ser Gly Asp Ala Gln Thr Leu Cys Leu Thr
3845 3850 3855
Asp Asp Asp Thr Val Trp Ser Trp Gly Asp Gly Asp Tyr Gly Lys Leu
3860 3865 3870
Gly Arg Gly Gly Ser Asp Gly Cys Lys Val Pro Met Lys Ile Asp Ser
3875 3880 3885
Leu Thr Gly Leu Gly Val Val Lys Val Glu Cys Gly Ser Gln Phe Ser
3890 3895 3900
Val Ala Leu Thr Lys Ser Gly Ala Val Tyr Thr Trp Gly Lys Gly Asp
3905 3910 3915 3920
Tyr His Arg Leu Gly His Gly Ser Asp Asp His Val Arg Arg Pro Arg
3925 3930 3935
Gln Val Gln Gly Leu Gln Gly Lys Lys Val Ile Ala Ile Ala Thr Gly
3940 3945 3950
Ser Leu His Cys Val Cys Cys Thr Glu Asp Gly Glu Val Tyr Thr Trp
3955 3960 3965
Gly Asp Asn Asp Glu Gly Gln Leu Gly Asp Gly Thr Thr Asn Ala Ile
3970 3975 3980
Gln Arg Pro Arg Leu Val Ala Ala Leu Gln Gly Lys Lys Val Asn Arg
3985 3990 3995 4000
Val Ala Cys Gly Ser Ala His Thr Leu Ala Trp Ser Thr Ser Lys Pro
4005 4010 4015
Ala Ser Ala Gly Lys Leu Pro Ala Gln Val Pro Met Glu Tyr Asn His
4020 4025 4030
Leu Gln Glu Ile Pro Ile Ile Ala Leu Arg Asn Arg Leu Leu Leu Leu
4035 4040 4045
His His Leu Ser Glu Leu Phe Cys Pro Cys Ile Pro Met Phe Asp Leu
4050 4055 4060
Glu Gly Ser Leu Asp Glu Thr Gly Leu Gly Pro Ser Val Gly Phe Asp
4065 4070 4075 4080
Thr Leu Arg Gly Ile Leu Ile Ser Gln Gly Lys Glu Ala Ala Phe Arg
4085 4090 4095
Lys Val Val Gln Ala Thr Met Val Arg Asp Arg Gln His Gly Pro Val
4100 4105 4110

Val Glu Leu Asn Arg Ile Gln Val Lys Arg Ser Arg Ser Lys Gly Gly
4115 4120 4125
Leu Ala Gly Pro Asp Gly Thr Lys Ser Val Phe Gly Gln Met Cys Ala
4130 4135 4140
Lys Met Ser Ser Phe Gly Pro Asp Ser Leu Leu Leu Pro His Arg Val
4145 4150 4155 4160
Trp Lys Val Lys Phe Val Gly Glu Ser Val Asp Asp Cys Gly Gly Gly
4165 4170 4175
Tyr Ser Glu Ser Ile Ala Glu Ile Cys Glu Glu Leu Gln Asn Gly Leu
4180 4185 4190
Thr Pro Leu Leu Ile Val Thr Pro Asn Gly Arg Asp Glu Ser Gly Ala
4195 4200 4205
Asn Arg Asp Cys Tyr Leu Leu Ser Pro Ala Ala Arg Ala Pro Val His
4210 4215 4220
Ser Ser Met Phe Arg Phe Leu Gly Val Leu Leu Gly Ile Ala Ile Arg
4225 4230 4235 4240
Thr Gly Ser Pro Leu Ser Leu Asn Pro Cys Arg Ala Leu Ser Gly Ser
4245 4250 4255
Ser Trp Leu Gly *
4260

<210> 1356
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1356
Met Ser Lys Val Lys Pro Leu His Gly Ala Pro Ala Pro Leu Leu Val
1 5 10 15
Ser Leu Cys Leu Leu Ser Trp Cys Gly Leu Pro Gly Val Ile Val His
20 25 30
Val Thr Tyr Val Ser Pro Arg His Leu Ser Asn Thr Arg Ser Gly Leu
35 40 45
Glu Ser Ile His Gly Cys Asp Pro Met His Gly Ser Pro Val Gly *
50 55 60 63

<210> 1357
<211> 111
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(111)
<223> Xaa = any amino acid or nothing

<400> 1357
Met Ile Phe Asn Lys Ala Ala Asp Thr Leu Gly Asp Val Trp Ile Leu
1 5 10 15
Leu Ala Thr Leu Lys Val Leu Ser Leu Leu Trp Leu Leu Tyr Tyr Val
20 25 30
Ala Ser Thr Thr Arg Gln Pro His Ala Val Leu Tyr Gln Asp Pro His
35 40 45
Ala Gly Pro Leu Trp Val Arg Ser Ser Leu Val Leu Phe Gly Ser Cys

```
    50                  55                  60
Thr Phe Cys Leu Asn Ile Phe Arg Val Gly Tyr Asp Val Ser His Ile
65                  70                  75                  80
Arg Cys Lys Ser Gln Leu Asp Leu Val Phe Pro Val Ile Glu Met Val
                85                  90                  95
Phe Ile Gly Val Gln Thr Cys Val Leu Trp Lys His Cys Arg Xaa
            100                 105                 110 111


    <210> 1358
    <211> 47
    <212> PRT
    <213> Homo sapiens


    <400> 1358
Met Ala Leu Leu Ile Ser Thr Cys Ile Asn Lys Ala Val Leu Arg Phe
 1               5                  10                  15
Thr Leu Ser Ser Met Asn Asn Lys Ile Ile Leu Ser Trp Tyr Ser Phe
            20                  25                  30
Asn Val Ile Leu Ile Phe His Glu Asn Val Val Tyr Tyr Ile  *
        35                  40                  45  46


    <210> 1359
    <211> 73
    <212> PRT
    <213> Homo sapiens


    <400> 1359
Met Phe Ser Pro Cys Gly Pro Ala Ser Leu Gly Leu Leu Phe Val Leu
 1               5                  10                  15
Cys Thr His Ser Gln Ala Leu Ala Phe Phe Trp Gly Pro Ser Ser Leu
            20                  25                  30
Ile Gly Ala Ser Gly Phe Leu Leu Gln Arg Thr Ser Leu Leu Arg His
        35                  40                  45
Val Phe Leu Gly Leu Val Tyr Ala Cys Trp Ala His Trp Leu Tyr Cys
    50                  55                  60
Ser Ser Arg Pro Val Thr Lys Glu  *
65                  70      72


    <210> 1360
    <211> 57
    <212> PRT
    <213> Homo sapiens


    <400> 1360
Met Lys Thr Gly Ser Leu Leu Leu Thr Leu Trp Phe Ser Gln Thr Phe
 1               5                  10                  15
Ser Phe Asn Leu Phe Phe Ala Pro Pro His Ser Leu Leu Gln Ser Ser
            20                  25                  30
Ile Phe Phe Ser Val Ser Ser Ile Thr Thr Val His Pro Ile Leu Val
        35                  40                  45
```

Phe Phe Phe Ala Phe Phe Arg Thr *
50 55 56

<210> 1361
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1361
Met Phe Val Leu Phe Leu Ile Leu Val Leu Arg Asn His Phe Leu Val
1 5 10 15
Thr Ile Lys Tyr Gly Val Gly Cys Gly Phe Ile Ile Ser Val Cys Leu
20 25 30
Arg Ala Lys His Phe Asn Phe Asp Glu Ala Gln Phe Val Ser Phe Phe
35 40 45
Leu Cys Asp Ser Cys Phe Cys Leu Leu Arg Asn Leu Pro Thr Gln Arg
50 55 60
Leu Gln Arg Phe Phe Phe Cys Trp Phe Phe Leu Ile *
65 70 75 76

<210> 1362
<211> 106
<212> PRT
<213> Homo sapiens

<400> 1362
Met Gln Asn Arg Thr Gly Leu Ile Leu Cys Ala Leu Ala Leu Leu Met
1 5 10 15
Gly Phe Leu Met Val Cys Leu Gly Ala Phe Phe Ile Ser Trp Gly Ser
20 25 30
Ile Phe Asp Cys Gln Gly Ser Leu Ile Ala Ala Tyr Leu Leu Leu Pro
35 40 45
Leu Gly Phe Val Ile Leu Leu Ser Gly Ile Phe Trp Ser Asn Tyr Arg
50 55 60
Gln Val Thr Glu Ser Lys Gly Val Leu Arg His Met Leu Arg Gln His
65 70 75 80
Leu Ala His Gly Ala Leu Pro Val Ala Thr Val Asp Arg Ala Ala Leu
85 90 95
Leu Lys Ile Met Cys Lys Gln Leu Leu *
100 105

<210> 1363
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1363
Met Ala Trp Lys Pro Leu Gly Arg Gln Ala Val Leu Arg Glu Thr Pro
1 5 10 15
Leu Ala Thr Leu Cys Ile Asp Arg Arg Gln Val Ser Ser Ser Leu Val

20 25 30
Gln Glu Gly Phe His Ser Lys Ser Cys His Cys Leu Gly Asp Ser Phe
35 40 45
Arg Glu Lys Asn Gln Val Val Gly *
50 55 56

<210> 1364
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1364
Met Cys Leu Leu Lys Ala Ala Pro Phe Phe Phe Phe Tyr Val Pro Gln
1 5 10 15
Val Gly Lys Gly Asn Pro Arg Pro Pro Arg Gly Cys Ser Ala Phe His
20 25 30
Pro Pro Thr His Leu Arg Pro Gly Ser Cys Ser Val Ala Gln Ala Gly
35 40 45
Val Gln Trp Arg Ser Leu Gly Ser Ile Ala Ala Ser Val Ser Trp Val
50 55 60
Gln Ala Ile Leu Leu Pro Gln Pro Leu Glu *
65 70 74

<210> 1365
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1365
Met Lys Leu Gln Val Phe Ala Val Asn Ile Thr Ala Leu Lys Ala Ala
1 5 10 15
Arg Leu Glu Leu Phe Val Leu Pro Gly Gly Phe Ile Val Phe Leu Ala
20 25 30
Ser Glu Leu Lys Leu Gln Thr Ser Leu Glu Ser Val Ala Pro His Lys
35 40 45
Asp Ser Met Ser Leu Lys Ser Glu His *
50 55 57

<210> 1366
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1366
Met His Cys Ser Phe Ile Ser Ala Phe Leu Leu Pro Val Phe Leu Ser
1 5 10 15
Leu Thr Val Ser Ala Ser Ile Phe Val Ser Leu His Ser Phe Pro Leu
20 25 30
Ser Leu Ser Tyr Phe Ser Phe Leu Gly Ser Phe Phe Leu Ser Val Cys
35 40 45

Leu Asp Leu Tyr Ser Ser Leu Phe Phe *
50 55 57

<210> 1367
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1367
Met Met Gly Arg Ile Phe Ala Ala Leu Ser Leu Ile Lys Leu Met Met
1 5 10 15
Tyr Ser Leu Phe Pro Val Ile Glu Ser Ser Leu Cys His Leu Glu Val
20 25 30
Trp Ala Trp Arg His Ile Trp Pro Thr Ala Gly Arg Gly Val Pro *
35 40 45 47

<210> 1368
<211> 96
<212> PRT
<213> Homo sapiens

<400> 1368
Met Gly Arg Arg Lys Ser Phe Phe Phe Leu Phe Leu Glu Cys Arg Gln
1 5 10 15
Lys Gly Leu His Ile Pro Leu Cys Thr Cys Ser His Ala Pro Arg Pro
20 25 30
Pro Leu Ala Ala Pro Ser Ala Leu Ile Leu Pro Pro Glu Ile Ser His
35 40 45
Thr Ser Arg Gly Ile Leu Leu Ser His Gly Leu Phe Pro Thr Ala Thr
50 55 60
Met Pro Leu Phe Phe Pro Ser His Ala Ser His Ser Pro Thr Val Thr
65 70 75 80
Met Pro Leu Phe Phe Pro Ser His Ala Ser His Ser Pro Ser Thr *
85 90 95

<210> 1369
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1369
Met Trp Asp His Phe Ile Leu Ser Arg Val Leu Phe Cys Leu Phe Val
1 5 10 15
Phe His Ser Arg Val Leu Lys Asp His Met Ala Ser Asn Ala Tyr Lys
20 25 30
Ser Ala Leu Phe Phe Thr Val Arg Tyr Leu Glu Thr Lys Gln Phe Leu
35 40 45
Leu Arg Cys Cys Cys Trp Pro Asp Ala Val Ala His Ala Cys Asn Thr
50 55 60
Ser Thr Leu Arg Gly Gln Gly Arg His Ile Thr *

65 70 75

<210> 1370
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1370
Met Cys Ser Cys Leu His Thr Leu Gln Arg Arg Phe Leu His Phe Val
1 5 10 15
Ser Ile Ala Leu Ser Lys Ile Trp Gln Asn Asn Ala Phe His Leu Gln
20 25 30
Val Glu Val Ser Trp Leu Ser Thr Phe Val Asp Lys Val Ile Val Met
35 40 45
Arg Leu Ile Ser Ser Lys His Phe Thr Asp Thr Met Asn Asp Arg Val
50 55 60
His Ser Phe Leu Asn Asp Ile Gly Phe Val Cys Leu Leu Ser *
65 70 75 78

<210> 1371
<211> 227
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(227)
<223> Xaa = any amino acid or nothing

<400> 1371
Met Leu Tyr Phe Gln Leu Val Ile Met Ala Gly Thr Val Leu Leu Ala
1 5 10 15
Tyr Tyr Phe Glu Cys Thr Asp Thr Phe Gln Val His Ile Gln Gly Phe
20 25 30
Phe Cys Gln Asp Gly Asp Leu Met Lys Pro Tyr Pro Gly Thr Glu Glu
35 40 45
Glu Ser Phe Ile Thr Pro Leu Val Leu Tyr Cys Val Leu Ala Ala Thr
50 55 60
Pro Thr Ala Ile Ile Phe Ile Gly Glu Ile Ser Met Tyr Phe Ile Lys
65 70 75 80
Ser Thr Arg Glu Ser Leu Ile Ala Gln Glu Lys Thr Ile Leu Thr Gly
85 90 95
Glu Cys Cys Tyr Leu Asn Pro Leu Leu Arg Arg Ile Ile Arg Phe Thr
100 105 110
Gly Val Phe Ala Phe Gly Leu Phe Ala Thr Asp Ile Phe Val Asn Ala
115 120 125
Gly Gln Val Val Thr Gly His Leu Thr Pro Tyr Phe Leu Thr Val Cys
130 135 140
Lys Pro Asn Tyr Thr Ser Ala Asp Cys Gln Ala His His Gln Phe Ile
145 150 155 160
Asn Asn Gly Asn Ile Cys Thr Gly Asp Leu Gly Ser Asp Arg Lys Gly
165 170 175
Ser Glu Ile Leu Ser Leu Gln Thr Arg Cys Ser Glu His Leu Leu Arg
180 185 190

```
Leu Ile Trp Pro Arg Cys Ile Phe Thr Arg His Asn Gln Gly Arg Gly
        195                 200                 205
Gly Ser Ser Met Gly Pro Ser Arg Trp Leu Cys Leu Gly Thr Phe Leu
    210                 215                 220
His Xaa Leu
225     227
```

<210> 1372
<211> 99
<212> PRT
<213> Homo sapiens

<400> 1372

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Met Phe Leu Ser Leu Ser Leu Thr Leu Cys Leu Cys Phe Ser Phe Phe
  1               5                  10                  15
Cys Leu Tyr Leu Ser Leu Ser Leu Tyr Leu Arg Ser Phe Phe Cys Leu
             20                  25                  30
Pro Phe His Val Ser Val Phe Leu Cys Leu Phe Pro Ser Val Leu Phe
         35                  40                  45
Leu Ser Val Ala Leu Gly Ser Pro Glu Asn His Ile Ser Trp Arg Lys
     50                  55                  60
Val Gly Glu Glu Leu Lys Leu Ala Ser His Arg Asn Phe Cys Ser Leu
 65                  70                  75                  80
Ile Gln Met Met Arg Ser Asn Lys Pro Ser Pro Ser Arg Gln Arg Gly
                 85                  90                  95
Trp Ala  *
     98
```

<210> 1373
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1373

```
Met Leu His Thr Pro Gln Thr Cys Arg Pro Gly Leu Cys Val Leu Ala
  1               5                  10                  15
Ser Arg Pro Val Leu Tyr Thr Leu Cys Leu Leu Ile Pro Val Leu Cys
             20                  25                  30
Gly Asp Thr Phe Trp Ala Ser Trp Ser Leu Leu Thr Lys Ala Thr Pro
         35                  40                  45
Ser Ser Leu Leu Cys Leu Ser Asp Lys Ser Ile Pro Ser Leu Ile Ser
     50                  55                  60
Lys Gly Asp Ser  *
 65          68
```

<210> 1374
<211> 296
<212> PRT
<213> Homo sapiens

<400> 1374
Met Arg Ser Lys Ile Met Ile His Ile His Ile Phe Leu Leu Ala Ser
1 5 10 15
Phe Arg Phe Lys Glu His Val Gln Asn Asn Leu Pro Arg Asp Leu Leu
20 25 30
Thr Gly Glu Gln Phe Ile Gln Leu Arg Arg Glu Leu Ala Ser Val Asn
35 40 45
Gly His Ser Gly Asp Asp Gly Pro Pro Gly Asp Asp Leu Pro Ser Gly
50 55 60
Ile Glu Asp Ile Thr Asp Pro Ala Lys Leu Ile Thr Glu Ile Glu Asn
65 70 75 80
Met Arg His Arg Ile Ile Glu Ile His Gln Glu Met Phe Asn Tyr Asn
85 90 95
Glu His Glu Val Ser Lys Arg Trp Thr Phe Glu Glu Gly Ile Lys Arg
100 105 110
Pro Tyr Phe His Val Lys Pro Leu Glu Lys Ala Gln Leu Lys Asn Trp
115 120 125
Lys Glu Tyr Leu Glu Phe Glu Ile Glu Asn Gly Thr His Glu Arg Val
130 135 140
Val Val Leu Phe Glu Arg Cys Val Ile Ser Cys Ala Leu Tyr Glu Glu
145 150 155 160
Phe Trp Ile Lys Tyr Ala Lys Tyr Met Glu Asn His Ser Ile Glu Gly
165 170 175
Val Arg His Val Phe Ser Arg Ala Cys Thr Ile His Leu Pro Lys Lys
180 185 190
Pro Met Val His Met Leu Trp Ala Ala Phe Glu Glu Gln Gln Gly Asn
195 200 205
Ile Asn Glu Ala Arg Asn Ile Leu Lys Thr Phe Glu Glu Cys Val Leu
210 215 220
Gly Leu Ala Met Val Arg Leu Arg Arg Val Ser Leu Glu Arg Arg His
225 230 235 240
Gly Asn Leu Glu Glu Ala Glu His Leu Leu Gln Asp Ala Ile Lys Asn
245 250 255
Ala Lys Ser Asn Asn Glu Ser Ser Phe Tyr Ala Val Lys Leu Ala Arg
260 265 270
His Leu Phe Lys Ile Gln Lys Asn Leu Pro Lys Ser Arg Lys Val Leu
275 280 285
Leu Glu Ala Ile Glu Arg Asp Lys
290 295 296

<210> 1375
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1375
Met Cys Leu Leu Lys Ala Ala Pro Phe Phe Phe Phe Tyr Val Pro Gln
1 5 10 15
Val Gly Lys Gly Asn Pro Arg Pro Pro Arg Gly Cys Ser Ala Phe His
20 25 30
Pro Pro Thr His Leu Arg Pro Gly Ser Cys Ser Val Ala Gln Ala Gly
35 40 45
Val Gln Trp Arg Ser Leu Gly Ser Ile Ala Ala Ser Val Ser Trp Val
50 55 60
Gln Ala Ile Leu Leu Pro Gln Pro Leu Glu *
65 70 74

<210> 1376
<211> 61
<212> PRT
<213> Homo sapiens

<400> 1376
Met Cys Tyr Glu Trp Val Ile Thr Thr Val Gly Ser Trp Ala Leu Leu
1 5 10 15
Cys Gln Arg Thr Leu Trp Lys Pro His Arg Thr Tyr Gln Lys Leu Thr
20 25 30
Leu Asn Ser Cys Pro Thr Pro Ile Val Glu Gly Gly Leu Glu Ser Phe
35 40 45
Pro Ser Pro Asn Phe Pro Ser Cys Ile Ser Trp Ser *
50 55 60

<210> 1377
<211> 110
<212> PRT
<213> Homo sapiens

<400> 1377
Met Trp Val Trp Val Thr Ala Ala His Leu Leu Cys Ser Leu Ala Ala
1 5 10 15
Ser Phe Val Lys Lys Lys Ser Leu Gly Lys Leu Arg Val Asp Val Cys
20 25 30
Arg Ser Pro Pro Pro Glu Gly Ser Arg Thr Gln Thr Ser Ser Ser Leu
35 40 45
Phe Tyr Arg Gly Gly Asn Gly Ala Ser Tyr Ala Asn Tyr Ile Leu His
50 55 60
His Thr Met Ala Leu Glu Gly Gln Arg Ser His Trp Ala Pro Cys Val
65 70 75 80
Ser Cys Pro Ala Gln Gly Leu Ala Leu Arg Arg Gly Cys Thr Thr Phe
85 90 95
Leu His Lys Asn Lys Gly Gly Thr Glu Ala Val Thr Val *
100 105 109

<210> 1378
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1378
Met Phe Ala Leu Gln Lys Met Arg Leu Cys Val Leu Trp Arg Val Leu
1 5 10 15
Glu Glu Gly Gly Ile Thr Arg Phe Gly Asp Ser His Ser Asp Ser Leu
20 25 30
Leu Phe Ser Val Thr Phe Arg Ile His Arg Asp Met Phe Cys *
35 40 45 46

<210> 1379
<211> 140
<212> PRT
<213> Homo sapiens

<400> 1379
Met Arg His Pro Ser Pro Trp Pro Phe Leu Phe Phe Cys Phe Val Pro
1 5 10 15
Ala Thr Leu Arg Ser Phe Pro Ser Gly Leu Val Trp Pro Gly Cys Trp
20 25 30
Trp Glu Pro Arg Ala Ser Pro Ser Ser Leu Ala Pro Gly Met Lys Ser
35 40 45
Gln Leu Trp Ala Ala Ala Trp Arg Pro Gly Thr Ser Leu Gln Gly Met
50 55 60
Ala Gly Ile Leu Arg Gln Ala Ala Glu Ala Gly Pro Ala Gly Val Ala
65 70 75 80
Leu Ile Leu Ile Lys Gly Thr Gly Asn Glu Glu Pro Leu Gly Pro Leu
85 90 95
Pro Ser Arg Cys Leu Cys Pro Pro Pro Glu Glu Pro Arg Phe His Trp
100 105 110
Ala Leu Gly Lys Glu Pro Thr Gly Pro Gly Arg Pro Gln Pro Val Gln
115 120 125
His His Ile Glu Gly Pro His Pro Val Gly Phe Gly
130 135 140

<210> 1380
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1380
Met Gln Glu Pro Leu Thr Phe Leu Gln Leu Leu Arg Trp Gln Leu Phe
1 5 10 15
Pro Leu Pro Asp Ser Pro Thr Phe Ser Ala Phe Ile Leu Val Gly Leu
20 25 30
Cys Arg Met Leu Phe Ala Gly Arg Ile Ile Ser Gly Leu Thr Arg Val
35 40 45
Ile *
49

<210> 1381
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1381
Met Leu Arg Leu Asp Ile Ile Asn Ser Leu Val Thr Thr Val Phe Met
1 5 10 15
Leu Ile Val Ser Val Leu Ala Leu Ile Pro Glu Thr Thr Thr Leu Thr
20 25 30

```
Val Gly Gly Gly Val Phe Ala Leu Val Thr Ala Val Cys Cys Leu Ala
        35                  40                  45
Asp Gly Ala Leu Ile Tyr Arg Lys Leu Leu Phe Asn Pro Ser Gly Pro
    50                  55                  60
Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu Val Leu  *
65                  70                  75      77
```

<210> 1382
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1382

```
Met Leu Thr Thr Leu Leu Leu Leu Leu His Lys Arg Ile Phe Arg Gly
 1               5                  10                  15
Asn Phe His Ile Leu His Phe His Ile Cys Ile Gln Ile Lys Lys Gln
            20                  25                  30
Ile Pro Ile Leu Glu Asn Asp Leu Phe Lys Met Tyr Thr Val Ser Asn
        35                  40                  45
Lys Ala Lys Thr Arg Thr Trp Ser  *
    50                  55  56
```

<210> 1383
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1383

```
Met Val Cys Arg Leu Pro Cys Thr Leu Leu Pro Trp Pro Leu Lys His
 1               5                  10                  15
Lys Gln Gly Ala Leu Leu Tyr Ile Cys Pro Ala Ser Leu Pro Ala Phe
            20                  25                  30
Asn Pro Arg Asn Leu Ser Val Tyr Leu Leu Phe Ser Ala Ser Glu Ser
        35                  40                  45
Leu Pro Leu Lys Ser Glu Gln Ala Arg Pro Gly Gly Ser Arg Leu  *
    50                  55                  60          63
```

<210> 1384
<211> 67
<212> PRT
<213> Homo sapiens

<400> 1384

```
Met Leu Ser Phe Val Pro Leu Leu Ser Ser Trp Leu Gly Thr Trp Ile
 1               5                  10                  15
Thr Asp Arg Gly Ala Ala Gly Ser Cys Gln Ala Glu Ala Pro Arg Leu
            20                  25                  30
Ala Gly Glu Thr Ala Gly Gln Arg Val Trp Glu Arg Gly Met Gln Arg
        35                  40                  45
Ala Ala Ala Val Gly Lys Ile Leu Asp Pro Lys Gly His Thr Ala Ser
```

```
    50                  55                  60
Pro His  *
 65  66


     <210> 1385
     <211> 50
     <212> PRT
     <213> Homo sapiens


     <400> 1385
Met Leu Val Leu Phe Val Ala Thr Trp Ser Asp Leu Gly Leu Cys Lys
 1               5                  10                  15
Lys Arg Pro Lys Pro Gly Gly Trp Asn Thr Gly Gly Cys Arg Tyr Pro
            20                  25                  30
Gly Leu Ala Cys Pro Leu Gly Arg Pro Pro Gly Gln Trp Gly Ala Thr
        35                  40                  45
Val  *
 49


     <210> 1386
     <211> 123
     <212> PRT
     <213> Homo sapiens


     <400> 1386
Met Lys Trp Val Thr Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala
 1               5                  10                  15
Tyr Ser Arg Gly Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val
            20                  25                  30
Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu Leu
        35                  40                  45
Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn
    50                  55                  60
Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu
65                  70                  75                  80
Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro
                85                  90                  95
Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val
            100                 105                 110
Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe
        115                 120         123


     <210> 1387
     <211> 65
     <212> PRT
     <213> Homo sapiens


     <400> 1387
Met Pro Arg Leu Phe Ser Pro Leu Ile Leu Leu His Thr Leu Ser Leu
 1               5                  10                  15
```

Lys Ser His Glu Thr Phe Gln Trp Ser Gln Phe Leu Tyr Gln Asn Thr
20 25 30
Arg Asp Ala Cys Phe Thr Trp Thr Tyr Ile Phe Pro Arg Ile Thr Trp
35 40 45
Ile Asn Glu Trp Cys Cys Phe Pro Val Val Gly Glu Lys Leu Gly Thr
50 55 60 64
*

<210> 1388
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1388
Met Gly Leu Leu Asn Lys Tyr Ala Ser Val Ile Ile Tyr Leu Tyr Phe
1 5 10 15
Ser Leu Val Lys Ser Glu Ser Leu Phe His Leu Met Tyr Leu Pro Ser
20 25 30
Leu Phe Ile Gln Phe Phe Leu Gly Ile Phe Ser Leu Lys Thr His Cys
35 40 45
Cys Thr Ser Lys Phe Asp Ser *
50 55

<210> 1389
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1389
Met Arg Arg Arg Ala Leu Lys His Trp Val Ala Leu Cys Leu Thr Trp
1 5 10 15
Thr Ala Gly Glu Ser Thr Gly Pro Trp Pro Ser Pro Glu Pro Ser Val
20 25 30
Arg Ala Lys Glu Ala Asp Pro Ser Gly Arg Arg Ser Leu Gly Ser Pro
35 40 45
Gly Leu Glu Cys Gly Pro Arg Leu Thr Arg Gly Ser Gly Arg Gln Cys
50 55 60
Asp Gly Pro Arg Gly Ile Cys His Ala Leu Gly *
65 70 75

<210> 1390
<211> 149
<212> PRT
<213> Homo sapiens

<400> 1390
Met Ala Ala Ser Pro Ala Arg Pro Ala Val Leu Ala Leu Thr Gly Leu
1 5 10 15
Ala Leu Leu Leu Leu Leu Cys Trp Gly Pro Gly Gly Ile Ser Gly Asn

```
                20                      25                      30
Lys Leu Lys Leu Met Leu Gln Lys Arg Glu Ala Pro Val Pro Thr Lys
            35                      40                      45
Thr Lys Val Ala Val Asp Glu Asn Lys Ala Lys Glu Phe Leu Gly Ser
        50                      55                      60
Leu Lys Arg Gln Lys Arg Gln Leu Trp Asp Arg Thr Arg Pro Glu Val
65                      70                      75                      80
Gln Gln Trp Tyr Gln Gln Phe Leu Tyr Met Gly Phe Asp Glu Ala Lys
                    85                      90                      95
Phe Glu Asp Asp Ile Thr Tyr Trp Leu Asn Arg Asp Arg Asn Gly His
                100                     105                     110
Glu Tyr Tyr Gly Asp Tyr Tyr Gln Arg His Tyr Asp Glu Asp Ser Ala
            115                     120                     125
Ile Gly Pro Arg Ser Pro Tyr Gly Phe Arg His Gly Ala Ser Val Asn
        130                     135                     140
Tyr Asp Asp Tyr  *
145             148
```

<210> 1391
<211> 125
<212> PRT
<213> Homo sapiens

<400> 1391

```
Met Val Met Gly Trp His Trp Pro Gln Gly Leu Gly Leu Ser Leu Ser
 1               5                  10                  15
Leu Cys Pro Ser Asp Leu Asp Gly Trp Val Ser Arg Glu Val Pro Leu
                20                      25                      30
Leu Asp Arg Pro Gln Ala Leu Pro Pro Cys Val Gln Ile Leu Ser Ala
            35                      40                      45
Pro Ala Ser Thr Ser Cys Pro Ser Ala Leu Ser Pro Trp His Asp Pro
        50                      55                      60
Gly Leu Pro Val Thr Ser Gln Asn His Phe Ala Trp Phe Pro Leu Gly
65                      70                      75                      80
Ser Lys Ala Cys Leu Gly Pro Ser Ile Asp Arg Glu Ala Val Lys Glu
                    85                      90                      95
Ile Asn Ala Glu Glu Gly Val Arg Arg Gln Thr Gln Gly Pro Ile Lys
                100                     105                     110
Val Arg Lys Gln Ala Gly Cys Gly Gly Ser Cys Leu  *
            115                     120             124
```

<210> 1392
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1392

```
Met Ile Ile Gln Ile Cys Thr Ile Ser Arg Ile Glu Phe Ile Cys Leu
 1               5                  10                  15
Cys Val Cys Val Phe Phe Arg Val Ile Trp Leu Pro Val Glu Phe Tyr
                20                      25                      30
Leu Glu Thr Lys Ile Leu Lys Val Val Phe Val Ile Val Phe Val Pro
            35                      40                      45
```

Ile Ile Leu Pro Leu His Pro *
50 55

<210> 1393
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1393
Met Glu Ala Trp Lys Ala Leu Ile Gly Leu Phe Pro Leu Arg Ser Ser
1 5 10 15
Ala Ser Pro Phe Thr Tyr His Cys Trp Glu Pro Ala Gln Pro Ala His
20 25 30
Gln Glu Phe His Ser Thr Ile Ala Leu Arg Gly Arg Gly Gly Lys Pro
35 40 45
Gln Glu Glu Ser Ser Pro *
50 54

<210> 1394
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1394
Met Ser Leu Asn Pro Glu Phe Leu Trp Leu Lys Trp Phe Ser Leu Leu
1 5 10 15
Leu Arg Gly Arg Arg Asn Ser Cys Leu Ile Ala Leu Lys Gly Tyr His
20 25 30
Ser Val Met Ile Phe His Leu Pro Leu Ile Pro Ser Ser Val Thr Ser
35 40 45
Cys His *
50

<210> 1395
<211> 105
<212> PRT
<213> Homo sapiens

<400> 1395
Met Pro Cys Phe Met Pro Asn Pro Gly Ala Val Leu Gly Leu Pro Pro
1 5 10 15
Trp Leu Leu Ser Thr Gln Arg Leu Thr His Thr Arg Ala Tyr Leu Asn
20 25 30
Trp Leu Ala Ser Asp Arg Trp Met Arg Arg His Trp Arg Thr Gly Glu
35 40 45
Ser Gln Val Glu Arg Ser Ser Arg Pro Trp Trp Glu Thr Gln His Leu
50 55 60
Ser Pro Ala Ser Leu Gly Arg Arg Pro Ala Pro Gly Leu Gln Glu His
65 70 75 80
Phe Leu Asp Thr Asp Gly Lys Val Ala Asp Ser Gly Leu Gln Met Gly

```
                85                  90                  95
Phe Gly Leu Leu Ser Leu Pro Ser Ile
            100                 105


    <210> 1396
    <211> 49
    <212> PRT
    <213> Homo sapiens


    <400> 1396
Met Leu Cys Asn Leu Ala Leu Lys Leu Leu Asn Cys Val Ser Ala Trp
1               5                   10                  15
Asn Met Asn Ile Arg Leu Lys Cys Leu Leu Lys Pro Lys Asn Val Ser
            20                  25                  30
Lys Val Cys Ser Arg Gly Leu Tyr Phe Ile Tyr Val Met Asp Ser Leu
        35                  40                  45              48
*


    <210> 1397
    <211> 104
    <212> PRT
    <213> Homo sapiens


    <400> 1397
Met Leu Ser Trp Val Phe Pro Gly Ser Val Phe Gly Leu Cys Leu Ser
1               5                   10                  15
Val Trp Val Phe Trp His Gln Ala Ser Leu Gly Arg Ala Ser Gly Cys
            20                  25                  30
Ala Pro Ala Leu Arg Val Gly Leu Ile Pro Gly Cys Arg Gly Leu Arg
        35                  40                  45
Ala Glu Leu Phe His Leu Glu Asp Lys Asp Gly Ser Ser Gly Leu Gly
    50                  55                  60
Gly Gly Gly Gly Ala Gly His Asp Leu Ile Leu Arg Arg Ala Trp Cys
65                  70                  75                  80
Trp Gly Leu Thr Asp Asp Gly Glu Ala Arg Val Gln Ala Leu Gly Met
                85                  90                  95
Thr Pro Gly Ile Ala Phe Ser  *
            100         103


    <210> 1398
    <211> 82
    <212> PRT
    <213> Homo sapiens


    <400> 1398
Met Lys Pro Val Trp Val Ala Thr Leu Leu Trp Met Leu Leu Leu Val
1               5                   10                  15
Pro Arg Leu Gly Ala Ala Arg Lys Gly Ser Pro Glu Glu Ala Ser Phe
            20                  25                  30
```

```
Tyr Tyr Gly Thr Phe Pro Leu Gly Gly His His Ser Ala Glu Gly Thr
        35                  40                  45
Ala Arg Gln Pro Leu Pro Ile Leu Pro Val Leu Ala Pro Ala Pro Ala
    50                  55                  60
His Arg His Pro Ser Arg Ala Gly Glu Gln Glu Gly Asn Arg Ile Leu
65                  70                  75                  80
Gln  *
81
```

```
<210> 1399
<211> 68
<212> PRT
<213> Homo sapiens
```

```
<400> 1399
Met Gly Ala Val Leu Leu Val Cys Leu Gln Thr Ser Ile Ala Ala Arg
  1               5                  10                  15
Asp Asp Leu Lys Asp Ala Val Asp Ser Gly Leu Leu Leu Ala Asn Ser
            20                  25                  30
Leu Ser His Phe Val Pro Leu Val Val Arg Asn Tyr Leu Val His Cys
        35                  40                  45
Asn Leu Leu Gln Thr Leu Lys Phe Leu Leu Gly Asn Cys Thr Ala Gly
    50                  55                  60
Lys Ala Ser  *
65      67
```

```
<210> 1400
<211> 54
<212> PRT
<213> Homo sapiens
```

```
<400> 1400
Met Ala Val Ala Phe Val Leu Ser Leu Gly Val Ala Ala Leu Tyr Lys
  1               5                  10                  15
Phe Arg Val Ala Asp Gln Arg Lys Lys Ala Tyr Ala Asp Phe Tyr Arg
            20                  25                  30
Asn Tyr Asp Val Met Lys Asp Phe Glu Glu Met Arg Lys Ala Gly Ile
        35                  40                  45
Phe Gln Ser Val Lys  *
    50          53
```

```
<210> 1401
<211> 232
<212> PRT
<213> Homo sapiens
```

```
<400> 1401
Met Leu Phe Ala Phe Ile Ser Leu Leu Val Met Leu Pro Thr Trp Trp
  1               5                  10                  15
Ile Val Ser Ser Trp Leu Val Trp Gly Val Ile Leu Phe Val Tyr Leu
```

```
                20                  25                  30
Val Ile Arg Ala Leu Arg Leu Trp Arg Thr Ala Lys Leu Gln Val Thr
        35                  40                  45
Leu Lys Lys Tyr Ser Val His Leu Glu Asp Met Ala Thr Asn Ser Arg
    50                  55                  60
Ala Phe Thr Asn Leu Val Arg Lys Ala Leu Arg Leu Ile Gln Glu Thr
65                  70                  75                  80
Glu Val Ile Ser Arg Gly Phe Thr Leu Leu Leu Asp Arg Val Ser Ala
                85                  90                  95
Ala Cys Pro Phe Asn Lys Ala Gly Gln His Pro Ser Gln His Leu Ile
            100                 105                 110
Gly Leu Arg Lys Ala Val Tyr Arg Thr Leu Arg Ala Ser Phe Gln Ala
        115                 120                 125
Ala Arg Leu Ala Thr Leu Tyr Met Leu Lys Asn Tyr Pro Leu Asn Ser
    130                 135                 140
Glu Ser Asp Asn Val Thr Asn Tyr Ile Cys Val Val Pro Phe Lys Glu
145                 150                 155                 160
Leu Gly Leu Gly Leu Ser Glu Glu Gln Ile Ser Glu Glu Glu Ala His
                165                 170                 175
Lys Leu Tyr Arg Trp Leu Gln Pro Ala Cys Ile Glu Gly Phe Val Pro
            180                 185                 190
Thr Leu Gly Gly Thr Glu Phe Arg Val Leu Gln Thr Val Ser Pro Ile
        195                 200                 205
Thr Phe Tyr Ser Gln Phe Thr Ser Trp Ala Leu Thr Tyr Ser Ser Thr
    210                 215                 220
Ser Ala Ser Ser Tyr Leu Ile  *
225                 230 231
```

```
<210> 1402
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1402
Met Ala Pro Ala Arg Pro Trp Trp Leu Thr Pro Val Ile Pro Ala Leu
 1               5                  10                  15
Trp Glu Ala Glu Glu Asp Gly Ser Arg Gly Gln Glu Phe Lys Thr Ser
            20                  25                  30
Leu Ala Ser Met Val Lys Pro Arg Leu Tyr Tyr Lys Tyr Lys Asn  *
        35                  40                  45      47
```

```
<210> 1403
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1403
Met Leu Trp Arg Leu Ile Ile Ile Leu Cys Glu Ala Leu Gln Arg Lys
 1               5                  10                  15
Ser Arg Leu Leu Ala Asp Cys Asp His Phe Ser Phe Pro Asn Arg Tyr
            20                  25                  30
Glu Arg Lys Leu Leu Leu Asp Phe Thr Val Arg Ile Trp Ile Gln Thr
        35                  40                  45
```

Tyr Cys Pro His *
50 52

<210> 1404
<211> 90
<212> PRT
<213> Homo sapiens

<400> 1404
Met Arg Val Phe Cys Val Gly Leu Leu Leu Phe Ser Val Thr Trp Ala
1 5 10 15
Ala Pro Thr Phe Gln Pro Gln Thr Glu Lys Thr Lys Gln Ser Cys Val
20 25 30
Glu Glu Gln Arg Gln Glu Glu Lys Asn Lys Asp Asn Ile Gly Phe His
35 40 45
His Leu Gly Lys Arg Ile Asn Gln Glu Leu Ser Ser Lys Glu Asn Ile
50 55 60
Val Gln Glu Arg Lys Lys Asp Leu Ser Leu Ser Glu Ala Ser Glu Asn
65 70 75 80
Lys Gly Ser Ser Lys Ser Gln Asn Tyr Phe
85 90

<210> 1405
<211> 477
<212> PRT
<213> Homo sapiens

<400> 1405
Met Ala Gly Arg Gly Gly Ser Ala Leu Leu Ala Leu Cys Gly Ala Leu
1 5 10 15
Ala Ala Cys Gly Trp Leu Leu Gly Ala Glu Ala Gln Glu Pro Gly Ala
20 25 30
Pro Ala Ala Gly Met Arg Arg Arg Arg Arg Leu Gln Gln Glu Asp Gly
35 40 45
Ile Ser Phe Glu Tyr His Arg Tyr Pro Glu Leu Arg Glu Ala Leu Val
50 55 60
Ser Val Trp Leu Gln Cys Thr Ala Ile Ser Arg Ile Tyr Thr Val Gly
65 70 75 80
Arg Ser Phe Glu Gly Arg Glu Leu Leu Val Ile Glu Leu Ser Asp Asn
85 90 95
Pro Gly Val His Glu Pro Gly Glu Pro Glu Phe Lys Tyr Ile Gly Asn
100 105 110
Met His Gly Asn Glu Ala Val Gly Arg Glu Leu Leu Ile Phe Leu Ala
115 120 125
Gln Tyr Leu Cys Asn Glu Tyr Gln Lys Gly Asn Glu Thr Ile Val Asn
130 135 140
Leu Ile His Ser Thr Arg Ile His Ile Met Pro Ser Leu Asn Pro Asp
145 150 155 160
Gly Phe Glu Lys Ala Ala Ser Gln Pro Gly Glu Leu Lys Asp Trp Phe
165 170 175
Val Gly Arg Ser Asn Ala Gln Gly Ile Asp Leu Asn Arg Asn Phe Pro
180 185 190
Asp Leu Asp Arg Ile Val Tyr Val Asn Glu Lys Glu Gly Gly Pro Asn

195 200 205
Asn His Leu Leu Lys Asn Met Lys Lys Ile Val Asp Gln Asn Thr Lys
210 215 220
Leu Ala Pro Glu Thr Lys Ala Val Ile His Trp Ile Met Asp Ile Pro
225 230 235 240
Phe Val Leu Ser Ala Asn Leu His Gly Gly Asp Leu Val Ala Asn Tyr
245 250 255
Pro Tyr Asp Glu Thr Arg Ser Gly Ser Ala His Glu Tyr Ser Ser Ser
260 265 270
Pro Asp Asp Ala Ile Phe Gln Ser Leu Ala Arg Ala Tyr Ser Ser Phe
275 280 285
Asn Pro Ala Met Ser Asp Pro Asn Arg Pro Pro Cys Arg Lys Asn Asp
290 295 300
Asp Asp Ser Ser Phe Val Asp Gly Thr Thr Asn Gly Gly Ala Trp Tyr
305 310 315 320
Ser Val Pro Gly Gly Met Gln Asp Phe Asn Tyr Leu Ser Ser Asn Cys
325 330 335
Phe Glu Ile Thr Val Glu Leu Ser Cys Glu Lys Phe Pro Pro Glu Glu
340 345 350
Thr Leu Lys Thr Tyr Trp Glu Asp Asn Lys Asn Ser Leu Ile Ser Tyr
355 360 365
Leu Glu Gln Ile His Arg Gly Val Lys Gly Phe Val Arg Asp Leu Gln
370 375 380
Gly Asn Pro Ile Ala Asn Ala Thr Ile Ser Val Glu Gly Ile Asp His
385 390 395 400
Asp Val Thr Ser Ala Lys Asp Gly Asp Tyr Trp Arg Leu Leu Ile Pro
405 410 415
Gly Asn Tyr Lys Leu Thr Ala Ser Ala Pro Gly Tyr Leu Ala Ile Thr
420 425 430
Lys Lys Val Ala Val Pro Tyr Ser Pro Ala Ala Gly Val Asp Phe Glu
435 440 445
Leu Glu Ser Phe Ser Glu Arg Lys Glu Glu Glu Lys Glu Glu Leu Met
450 455 460
Glu Trp Trp Lys Met Met Ser Glu Thr Leu Asn Phe *
465 470 475 476

<210> 1406
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1406
Met Phe Ile Gly Ile Trp Val Ser Leu Tyr Gln Val Leu Trp Leu Lys
1 5 10 15
Glu Leu Leu Trp Gly His Tyr Ile Phe Trp Val Ser Arg Lys Met Phe
20 25 30
Val Tyr Gly Gly Val Gly Gly Lys Thr Ala Asn Ile Cys Arg Lys Gly
35 40 45
Arg Ile Ile Lys Lys Val *
50 54

<210> 1407
<211> 66
<212> PRT

<213> Homo sapiens

<400> 1407
Met Leu Leu Gly Val Arg Ala Val Pro Leu Cys Ser Ala Trp Gln Gly
1 5 10 15
Ala Val Gly Leu Val Ser Leu Thr Ile Ser Ile Cys Lys His Gly Leu
20 25 30
Ser Phe Gln Gln Asn Leu Val Pro Gly Lys Ser Asn Val Pro Lys Ala
35 40 45
Ser Asp Met Pro Arg Cys Pro Pro Val Asp Ala Ala Ala Asn Ser Arg
50 55 60
Ser Met
65 66

<210> 1408
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1408
Met Leu Leu Lys Phe Leu Cys Glu Cys Met Pro Ser Leu Leu Leu Ser
1 5 10 15
Glu Phe Leu Asp Ser Pro Arg Ser Gly Ile Asp Gly Ser Asn Gly Asn
20 25 30
Ser Met Phe Asn Phe Val Lys Asn Cys His Phe Pro Thr Ala Ala Ala
35 40 45
Pro Phe Pro Thr Pro Thr Ser Arg Val *
50 55 57

<210> 1409
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1409
Met Ile Glu Thr Trp Leu Trp Leu Leu Leu Leu Asn Val Gly Gly Thr
1 5 10 15
Gly Gln Trp Ser Gly Pro Thr Phe Arg Arg Glu Asn Val Leu Pro Ala
20 25 30
Ala His Ile Gly Pro Lys Tyr Gly Pro Leu Leu Pro Ser Thr Ala Lys
35 40 45
Gly Thr Val Lys Val Ser Cys Pro Ser Ser Thr Pro His Pro Pro Leu
50 55 60
Gln Gly Lys Gly Thr Pro Asp *
65 70 71

<210> 1410
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1410
Met Arg Phe Leu Leu Leu Trp Phe Ile Leu Arg Gly Arg Gln Leu Val
1 5 10 15
Pro Leu Arg Pro Arg Arg Ser Pro Leu Pro Asp Thr Asn Ala Pro Leu
20 25 30
Pro Gly Leu Gly Gly Gly Asp Gly Ser Thr Gln Thr Pro Phe Ala Gln
35 40 45
Ser Arg Arg Leu *
50 52

<210> 1411
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1411
Met Ala Ser Gln Ser Met Cys Phe Leu Trp Leu Ala Pro Val Thr Trp
1 5 10 15
Cys Val Met Phe Ser Ser Arg Thr Cys Tyr Ser Pro Cys Gly Asn Phe
20 25 30
Ser Thr Ala Pro Gly Arg Val Ile Phe His Ser Trp Asp Arg Ala Gln
35 40 45
Phe Val Tyr Ser Phe Leu Ser Arg Trp Arg Leu Gly Leu Phe Pro Pro
50 55 60
Leu Ala Ser Val Asn Gly Asp Ala Val Ile Met Gly Val Pro Val Phe
65 70 75 80
Val *
81

<210> 1412
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1412
Met Phe Leu Leu Leu Phe Cys Leu Met Phe Asp Phe Thr Lys Val Phe
1 5 10 15
Phe Ile Leu Leu Leu His Ile Phe Cys Leu Ser Thr Cys Leu Phe Leu
20 25 30
Gly Leu His Ile Cys Ala Ser Phe His Ala Arg Ala Leu Leu Glu Thr
35 40 45
Ala Leu Ile Leu Leu Arg Met Lys Ile Ala Gly Phe Gln Val Ile Leu
50 55 60
Phe Pro Gln Asp Phe Val Leu *
65 70 71

<210> 1413
<211> 59
<212> PRT

<213> Homo sapiens

<400> 1413
Met Met Thr Ile Lys Glu Phe Thr Leu Leu Leu Val Ser Leu Gln Phe
1 5 10 15
Ser Thr Phe Pro Ser Lys Lys Phe Leu Leu Glu Thr His Phe Leu Lys
20 25 30
Asn Ser Glu Asn Trp Leu Gly Val Val Ala His Ala Cys Ser Leu Ser
35 40 45
Thr Leu Gly Trp Pro Arg Arg Arg Thr Ala *
50 55 58

<210> 1414
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1414
Met Leu Arg Leu Asp Ile Ile Asn Ser Leu Val Thr Thr Val Phe Met
1 5 10 15
Leu Ile Val Ser Val Leu Ala Leu Ile Pro Glu Thr Thr Thr Leu Thr
20 25 30
Val Gly Gly Gly Val Phe Ala Leu Val Thr Ala Val Cys Cys Leu Ala
35 40 45
Asp Gly Ala Leu Ile Tyr Arg Lys Leu Leu Phe Asn Pro Ser Gly Pro
50 55 60
Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu Val Leu *
65 70 75 77

<210> 1415
<211> 171
<212> PRT
<213> Homo sapiens

<400> 1415
Met His Met Met Lys Leu Ser Ile Lys Val Leu Leu Gln Ser Ala Leu
1 5 10 15
Ser Leu Gly Arg Ser Leu Asp Ala Asp His Ala Pro Leu Gln Gln Phe
20 25 30
Phe Val Val Met Glu His Cys Leu Lys His Gly Leu Lys Val Lys Lys
35 40 45
Ser Phe Ile Gly Gln Asn Lys Ser Phe Phe Gly Pro Leu Glu Leu Val
50 55 60
Glu Lys Leu Cys Pro Glu Ala Ser Asp Ile Ala Thr Ser Val Arg Asn
65 70 75 80
Leu Pro Glu Leu Lys Thr Ala Val Gly Arg Gly Arg Ala Trp Leu Tyr
85 90 95
Leu Ala Leu Met Gln Lys Lys Leu Ala Asp Tyr Leu Lys Val Leu Ile
100 105 110
Asp Asn Lys His Leu Leu Ser Glu Phe Tyr Glu Pro Glu Ala Leu Met
115 120 125
Met Glu Glu Glu Gly Met Val Ile Val Gly Leu Leu Val Gly Leu Asn

```
    130                 135                 140
Val Leu Asp Ala Asn Leu Trp Leu Glu Arg Arg Arg Leu Gly Phe Ser
145                 150                 155                 160
Gly Trp Ser Asn Arg Phe Phe Pro Leu Pro  *
                165                 170
```

<210> 1416
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1416

```
Met Leu Thr Arg Leu Val Leu Ser Ala His Leu Ser Ser Thr Thr Phe
 1               5                  10                  15
Pro Pro Trp Thr His Ala Ala Ile Ser Trp Glu Leu Asp Asn Val Leu
            20                  25                  30
Met Pro Ser Pro Arg Ile Trp Pro Gln Val Thr Pro Thr Ala Gly Gln
        35                  40                  45
Asp Val His Ala Ile Val Thr Arg Thr Cys Glu Ser Val Leu Ser Ser
    50                  55                  60
Val Val Tyr Thr His Gly Cys Gly Cys Val Arg Cys  *
65                  70                  75  76
```

<210> 1417
<211> 249
<212> PRT
<213> Homo sapiens

<400> 1417

```
Met Glu Lys Ile Pro Glu Ile Gly Lys Phe Gly Glu Lys Ala Pro Pro
 1               5                  10                  15
Ala Pro Ser His Val Trp Arg Pro Ala Ala Leu Phe Leu Thr Leu Leu
            20                  25                  30
Cys Leu Leu Leu Leu Ile Gly Leu Gly Val Leu Ala Ser Met Phe His
        35                  40                  45
Val Thr Leu Lys Ile Glu Met Lys Lys Met Asn Lys Leu Gln Asn Ile
    50                  55                  60
Ser Glu Glu Leu Gln Arg Asn Ile Ser Leu Gln Leu Met Ser Asn Met
65                  70                  75                  80
Asn Ile Ser Asn Lys Ile Arg Asn Leu Ser Thr Thr Leu Gln Thr Ile
                85                  90                  95
Ala Thr Lys Leu Cys Arg Glu Leu Tyr Ser Lys Glu Gln Glu His Lys
            100                 105                 110
Cys Lys Pro Cys Pro Arg Arg Trp Ile Trp His Lys Asp Ser Cys Tyr
        115                 120                 125
Phe Leu Ser Asp Asp Val Gln Thr Trp Gln Glu Ser Lys Met Ala Cys
    130                 135                 140
Ala Ala Gln Asn Ala Ser Leu Leu Lys Ile Asn Asn Lys Asn Ala Leu
145                 150                 155                 160
Glu Phe Ile Lys Ser Gln Ser Arg Ser Tyr Asp Tyr Trp Leu Gly Leu
                165                 170                 175
Ser Pro Glu Glu Asp Ser Thr Arg Gly Met Arg Val Asp Asn Ile Ile
            180                 185                 190
```

Asn Ser Ser Ala Trp Val Ile Arg Asn Ala Pro Asp Leu Asn Asn Met
195 200 205
Tyr Cys Gly Tyr Ile Asn Arg Leu Tyr Val Gln Tyr Tyr His Cys Thr
210 215 220
Tyr Lys Gln Arg Met Ile Cys Glu Lys Met Ala Asn Pro Val Gln Leu
225 230 235 240
Gly Ser Thr Tyr Phe Arg Glu Ala *
245 248

<210> 1418
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1418
Met Gly Leu Lys Asn Val Phe Leu Pro Val Phe Leu Pro Phe Leu Leu
1 5 10 15
Tyr Ser Glu Phe Leu Ser Leu Pro Pro Ser Leu Ser Ser Ser Leu Leu
20 25 30
Pro Phe Leu Pro Phe Ser Leu Pro Gly His Phe Ser Asn Leu His Gln
35 40 45
Arg Tyr Leu Lys Cys Trp Tyr Leu Arg Ile Ser Val Thr Pro Leu Ile
50 55 60 64
*

<210> 1419
<211> 468
<212> PRT
<213> Homo sapiens

<400> 1419
Met Leu Leu Leu Leu Leu Leu Pro Leu Leu Trp Gly Arg Glu Arg Val
1 5 10 15
Glu Gly Gln Lys Ser Asn Arg Lys Asp Tyr Ser Leu Thr Met Gln Ser
20 25 30
Ser Val Thr Val Gln Glu Gly Met Cys Val His Val Arg Cys Ser Phe
35 40 45
Ser Tyr Pro Val Asp Ser Gln Thr Asp Ser Asp Pro Val His Gly Tyr
50 55 60
Trp Phe Arg Ala Gly Asn Asp Ile Ser Trp Lys Ala Pro Val Ala Thr
65 70 75 80
Asn Asn Pro Ala Trp Ala Val Gln Glu Glu Thr Arg Asp Arg Phe His
85 90 95
Leu Leu Gly Asp Pro Gln Thr Lys Asn Cys Thr Leu Ser Ile Arg Asp
100 105 110
Ala Arg Met Ser Asp Ala Gly Arg Tyr Phe Phe Arg Met Glu Lys Gly
115 120 125
Asn Ile Lys Trp Asn Tyr Lys Tyr Asp Gln Leu Ser Val Asn Val Thr
130 135 140
Ala Leu Thr His Arg Pro Asn Ile Leu Ile Pro Gly Thr Leu Glu Ser
145 150 155 160
Gly Cys Phe Gln Asn Leu Thr Cys Ser Val Pro Trp Ala Cys Glu Gln

```
                    165                     170                     175
Gly Thr Pro Pro Met Ile Ser Trp Met Gly Thr Ser Val Ser Pro Leu
            180                 185                 190
His Pro Ser Thr Thr Arg Ser Ser Val Leu Thr Leu Ile Pro Gln Pro
        195                 200                 205
Gln His His Gly Thr Ser Leu Thr Cys Gln Val Thr Leu Pro Gly Ala
    210                 215                 220
Gly Val Thr Thr Asn Arg Thr Ile Gln Leu Asn Val Ser Tyr Pro Pro
225                 230                 235                     240
Gln Asn Leu Thr Val Thr Val Phe Gln Gly Glu Gly Thr Ala Ser Thr
                245                 250                     255
Ala Leu Gly Asn Ser Ser Ser Leu Ser Val Leu Glu Gly Gln Ser Leu
            260                 265                 270
Arg Leu Val Cys Ala Val Asp Ser Asn Pro Pro Ala Arg Leu Ser Trp
        275                 280                 285
Thr Trp Arg Ser Leu Thr Leu Tyr Pro Ser Gln Pro Ser Asn Pro Leu
    290                 295                 300
Val Leu Glu Leu Gln Val His Leu Gly Asp Glu Gly Glu Phe Thr Cys
305                 310                 315                     320
Arg Ala Gln Asn Ser Leu Gly Ser Gln His Val Ser Leu Asn Leu Ser
                325                 330                     335
Leu Gln Gln Glu Tyr Thr Gly Lys Met Arg Pro Val Ser Gly Val Leu
            340                 345                 350
Leu Gly Ala Val Gly Gly Ala Gly Ala Thr Ala Leu Val Phe Leu Ser
        355                 360                 365
Phe Cys Val Ile Phe Ile Val Val Arg Ser Cys Arg Lys Lys Ser Ala
    370                 375                 380
Arg Pro Ala Ala Asp Val Gly Asp Ile Gly Met Lys Asp Ala Asn Thr
385                 390                 395                     400
Ile Arg Gly Ser Ala Ser Gln Gly Asn Leu Thr Glu Ser Trp Ala Asp
                405                 410                     415
Asp Asn Pro Arg His His Gly Leu Ala Ala His Ser Ser Gly Glu Glu
            420                 425                 430
Arg Glu Ile Gln Tyr Ala Pro Leu Ser Phe His Lys Gly Glu Pro Gln
        435                 440                 445
Asp Leu Ser Gly Gln Glu Ala Thr Asn Asn Glu Tyr Ser Glu Ile Lys
    450                 455                 460
Ile Pro Lys  *
465     467
```

<210> 1420
<211> 150
<212> PRT
<213> Homo sapiens

<400> 1420

```
Met Ile Arg Cys Leu Ala Gln Pro Ala Ala Val Leu Ser Ser Leu Gly
 1               5                  10                      15
Leu Ala Gln Val Leu Gly Asp Ser Gly Arg Asp Glu Gln Val Leu Leu
            20                  25                  30
Arg Arg Ser Phe Arg Ala Glu Gly Cys Val Leu Cys Leu Cys Thr Trp
        35                  40                  45
Gly Thr Ala Val Pro Trp His Lys Val Glu Gly Ser Gly Gly Pro Cys
    50                  55                  60
Arg Ser Ala Ala Pro Leu Pro Ala Ser Ala Pro Phe Ser Ile Asp Gly
65                  70                  75                      80
```

Arg Ala Val Pro Trp Val Phe Ser Ala Leu Gln Ala Glu Val Gly Val
85 90 95
Leu Gly Glu Gln Met Arg Asp Gly Arg Gly Leu Cys Gly Ser His Pro
100 105 110
Trp Val Leu Gln Leu Ser Trp Pro Gly Val Phe Pro Gln Cys Trp Leu
115 120 125
Cys Pro Arg Leu Val Cys Leu Ala Lys Gln Asn Trp Gln Cys Pro Phe
130 135 140
Glu Thr Pro Arg Lys *
145 149

<210> 1421
<211> 89
<212> PRT
<213> Homo sapiens

<400> 1421
Met Tyr Val Phe Leu Leu Cys Pro Ala Cys Gly Arg Leu Met Gly Ser
1 5 10 15
Thr Tyr Met Arg Leu Leu Pro Gln Ser Glu Pro Ala Leu His Asn Arg
20 25 30
Ile Leu Arg Gln Thr Glu Pro Leu Leu Tyr Phe Lys Arg Gly Lys Gln
35 40 45
Gln Gly Leu Phe Tyr Ala Ser Phe Pro Ala Val His Arg Met Asp Ser
50 55 60
Leu Leu Arg Arg Thr Val Val Ile Leu Tyr Lys Arg Thr Asn Thr Val
65 70 75 80
Gly Val Ser Leu Phe Gln Asn Ala *
85 88

<210> 1422
<211> 83
<212> PRT
<213> Homo sapiens

<400> 1422
Met Met Thr Trp Ala Ser Leu Ala Leu Gly Leu Thr Arg Ala Leu Gly
1 5 10 15
Gly Met Gly Ser Phe Leu Leu Arg Ile Leu Gly Trp Ser Trp Ala Met
20 25 30
Gly Ser Arg Ser Arg Ala Arg Trp Pro Arg Gly Arg Leu Gly Phe Thr
35 40 45
Ser Met Leu Ser Cys Met Arg Gln Cys Ser Val Cys Arg Met Ile Met
50 55 60
Ser Leu Val Glu Val Leu Val Ala Thr Ser Gln Val Val Lys Leu Trp
65 70 75 80
Ser Arg *
82

<210> 1423
<211> 54

<212> PRT
<213> Homo sapiens

<400> 1423
Met Ile Leu Phe Pro Leu Cys Pro Ser Ile Leu Ser Leu Lys Pro Lys
1 5 10 15
Lys Lys Glu Ala Leu Pro Ser Leu Ser Val Met Gly Thr Val Phe Leu
20 25 30
Leu Val Ser Cys Ser Leu Pro Ser Pro Ala Ala Cys Gly Arg Asn Ala
35 40 45
Ala Thr Ala Gln His *
50 53

<210> 1424
<211> 73
<212> PRT
<213> Homo sapiens

<400> 1424
Met Cys Phe Ser Cys Leu Pro Leu Gln Cys Leu Ala Met Gly His Lys
1 5 10 15
His Tyr Pro Ala Val Gly Arg Leu Ala Lys Arg Ser Gln Leu Ala Ser
20 25 30
Pro Ala Ser Ser Arg Glu Trp Asn His Gly Ser Asn Thr Leu Leu Arg
35 40 45
Lys Gln Lys Leu Tyr Gly His Ile Phe His Leu Leu Ser Pro Arg Asn
50 55 60
His Met Tyr Cys Asp Pro Ala His *
65 70 72

<210> 1425
<211> 245
<212> PRT
<213> Homo sapiens

<400> 1425
Met Ala Cys Tyr Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu Leu
1 5 10 15
Ile Ala Val Phe Asn Asn Thr Phe Phe Glu Val Lys Ser Ile Ser Asn
20 25 30
Gln Val Trp Lys Phe Gln Arg Tyr Gln Leu Ile Met Thr Phe His Glu
35 40 45
Arg Pro Val Leu Pro Pro Pro Leu Ile Ile Phe Ser His Met Thr Met
50 55 60
Ile Phe Gln His Leu Cys Cys Arg Trp Arg Lys His Glu Ser Asp Pro
65 70 75 80
Asp Glu Arg Asp Tyr Gly Leu Lys Leu Phe Ile Thr Asp Asp Glu Leu
85 90 95
Lys Lys Val His Asp Phe Glu Glu Gln Cys Ile Glu Glu Tyr Phe Arg
100 105 110
Glu Lys Asp Asp Arg Phe Asn Ser Ser Asn Asp Glu Arg Ile Arg Val
115 120 125

Thr Ser Glu Arg Val Glu Asn Met Ser Met Arg Leu Glu Glu Val Asn
130 135 140
Glu Arg Glu His Ser Met Lys Ala Ser Leu Gln Thr Val Asp Ile Arg
145 150 155 160
Leu Ala Gln Leu Glu Asp Leu Ile Gly Arg Met Ala Thr Ala Leu Glu
165 170 175
Arg Leu Thr Gly Leu Glu Arg Ala Glu Ser Asn Lys Ile Arg Ser Arg
180 185 190
Thr Ser Ser Asp Cys Thr Asp Ala Arg Leu His Trp Pro Val Arg Ala
195 200 205
Ala Leu Thr Ser Gln Glu Arg Glu His Leu Ser Ala Pro Lys Arg Gly
210 215 220
Leu Glu Pro Trp Gln Asn Ile Leu Phe Ile Gln Tyr Lys Pro Ala Ala
225 230 235 240
Ser Ser Ser Thr *
244

<210> 1426
<211> 520
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(520)
<223> Xaa = any amino acid or nothing

<400> 1426
Met Asp Ile Leu Leu Leu Leu Leu Phe Phe Met Ile Ile Phe Ala Ile
1 5 10 15
Leu Gly Phe Tyr Leu Phe Ser Pro Asn Pro Ser Asp Pro Tyr Phe Ser
20 25 30
Thr Leu Glu Asn Ser Ile Val Ser Leu Phe Val Leu Leu Thr Thr Ala
35 40 45
Asn Phe Pro Asp Val Met Met Pro Ser Tyr Ser Arg Asn Pro Trp Ser
50 55 60
Cys Val Phe Phe Ile Val Tyr Leu Ser Ile Glu Leu Tyr Phe Ile Met
65 70 75 80
Asn Leu Leu Leu Ala Val Val Phe Asp Thr Phe Asn Asp Ile Glu Lys
85 90 95
Arg Lys Phe Lys Ser Leu Leu Leu His Lys Arg Thr Ala Ile Gln His
100 105 110
Ala Tyr Arg Leu Leu Ile Ser Gln Arg Arg Pro Ala Gly Ile Ser Tyr
115 120 125
Arg Gln Phe Glu Gly Leu Met Arg Phe Tyr Lys Pro Arg Met Ser Ala
130 135 140
Arg Glu Arg Tyr Leu Thr Phe Lys Ala Leu Asn Gln Asn Asn Thr Pro
145 150 155 160
Leu Leu Ser Leu Lys Asp Phe Tyr Asp Ile Tyr Glu Val Ala Ala Leu
165 170 175
Lys Trp Lys Ala Thr Lys Asn Arg Glu His Trp Val Asp Glu Leu Pro
180 185 190
Arg Thr Ala Leu Leu Ile Phe Lys Gly Ile Asn Ile Leu Val Lys Ala
195 200 205
Lys Ala Phe Gln Tyr Phe Met Tyr Leu Val Val Ala Val Asn Gly Val
210 215 220
Trp Ile Leu Val Glu Thr Phe Met Leu Lys Gly Gly Asn Phe Phe Ser

225 230 235 240
Lys His Val Pro Trp Ser Tyr Leu Val Phe Leu Thr Ile Tyr Gly Val
245 250 255
Glu Leu Phe Leu Lys Val Ala Gly Leu Gly Pro Val Glu Tyr Leu Ser
260 265 270
Ser Gly Trp Asn Leu Phe Asp Phe Ser Val Thr Val Phe Ala Phe Leu
275 280 285
Gly Leu Leu Ala Leu Ala Leu Asn Met Glu Pro Phe Tyr Phe Ile Val
290 295 300
Val Leu Arg Pro Leu Gln Leu Leu Arg Leu Phe Lys Leu Lys Glu Arg
305 310 315 320
Tyr Arg Asn Val Leu Asp Thr Met Phe Glu Leu Leu Pro Arg Met Ala
325 330 335
Ser Leu Gly Leu Thr Leu Leu Ile Phe Tyr Tyr Ser Phe Ala Ile Val
340 345 350
Gly Met Glu Phe Phe Cys Gly Ile Val Phe Pro Asn Cys Cys Asn Thr
355 360 365
Ser Thr Val Ala Asp Ala Tyr Arg Trp Arg Asn His Thr Val Gly Asn
370 375 380
Arg Thr Val Val Glu Glu Gly Tyr Tyr Tyr Leu Asn Asn Phe Asp Asn
385 390 395 400
Ile Leu Asn Ser Phe Val Thr Leu Phe Glu Leu Thr Val Val Asn Asn
405 410 415
Trp Tyr Ile Ile Met Glu Gly Val Thr Ser Gln Thr Ser His Trp Ser
420 425 430
Arg Leu Tyr Phe Met Thr Phe Tyr Ile Ala Thr Met Val Val Met Thr
435 440 445
Ile Ile Val Ala Phe Ile Leu Glu Ala Phe Val Phe Arg Met Asn Tyr
450 455 460
Ser Arg Lys Asn Gln Asp Ser Glu Val Asp Gly Gly Ile Thr Leu Glu
465 470 475 480
Lys Glu Ile Ser Lys Glu Glu Leu Val Ala Val Leu Glu Leu Tyr Arg
485 490 495
Glu Ala Arg Xaa Ala Ser Ser Asp Val Thr Arg Leu Leu Glu Thr Leu
500 505 510
Ser Gln Met Glu Arg Tyr Gln Gln
515 520

<210> 1427
<211> 106
<212> PRT
<213> Homo sapiens

<400> 1427
Met Ser Pro Gln His Leu Leu Leu Thr Leu Pro Leu Pro Leu Arg Ser
1 5 10 15
Pro Ile Leu Phe Ser His Thr Ala Gln Leu Leu Val Leu Thr Arg Ile
20 25 30
Ala Phe Arg Ala Cys Glu Leu Phe Phe Phe Val Met Val Ser Leu Cys
35 40 45
Cys Pro Gly Ile His Ser Phe Ile Ala Thr Ile Thr Tyr Glu Arg Asn
50 55 60
Ala Phe Gln Ser Ile Ser Ser Val Gln Gln Gln His Leu His Phe Gly
65 70 75 80
Cys Ala Leu Ser Pro Pro Ala Pro Arg Glu Ser Phe Ser Pro Cys Leu
85 90 95

```
Thr Thr His Arg Leu Pro Ser Cys Phe  *
            100                 105



     <210> 1428
     <211> 841
     <212> PRT
     <213> Homo sapiens


     <400> 1428
Met Ala Leu Ala Ser Ala Ala Pro Gly Ser Ile Phe Cys Lys Gln Leu
  1               5                  10                  15
Leu Phe Ser Leu Leu Val Leu Thr Leu Leu Cys Asp Ala Cys Gln Lys
            20                  25                  30
Val Tyr Leu Arg Val Pro Ser His Leu Gln Ala Glu Thr Leu Val Gly
        35                  40                  45
Lys Val Asn Leu Glu Glu Cys Leu Lys Ser Ala Ser Leu Ile Arg Ser
    50                  55                  60
Ser Asp Pro Ala Phe Arg Ile Leu Glu Asp Gly Ser Ile Tyr Thr Thr
 65                  70                  75                  80
His Asp Leu Ile Leu Ser Ser Glu Arg Lys Ser Phe Ser Ile Phe Leu
                 85                  90                  95
Ser Asp Gly Gln Arg Arg Glu Gln Gln Glu Ile Lys Val Val Leu Ser
            100                 105                 110
Ala Arg Glu Asn Lys Ser Pro Lys Lys Arg His Thr Lys Asp Thr Ala
        115                 120                 125
Leu Lys Arg Ser Lys Arg Arg Trp Ala Pro Ile Pro Ala Ser Leu Met
    130                 135                 140
Glu Asn Ser Leu Gly Pro Phe Pro Gln His Val Gln Gln Ile Gln Ser
145                 150                 155                 160
Asp Ala Ala Gln Asn Tyr Thr Ile Phe Tyr Ser Ile Ser Gly Pro Gly
                165                 170                 175
Val Asp Lys Glu Pro Phe Asn Leu Phe Tyr Ile Glu Lys Asp Thr Gly
            180                 185                 190
Asp Ile Phe Cys Thr Arg Ser Ile Asp Arg Glu Lys Tyr Glu Gln Phe
        195                 200                 205
Ala Leu Tyr Gly Tyr Ala Thr Thr Ala Asp Gly Tyr Ala Pro Glu Tyr
    210                 215                 220
Pro Leu Pro Leu Ile Ile Lys Ile Glu Asp Asp Asn Asp Asn Ala Pro
225                 230                 235                 240
Tyr Phe Glu His Arg Val Thr Ile Phe Thr Val Pro Glu Asn Cys Arg
                245                 250                 255
Ser Gly Thr Ser Val Gly Lys Val Thr Ala Thr Asp Leu Asp Glu Pro
            260                 265                 270
Asp Thr Leu His Thr Arg Leu Lys Tyr Lys Ile Leu Gln Gln Ile Pro
        275                 280                 285
Asp His Pro Lys His Phe Ser Ile His Pro Asp Thr Gly Val Ile Thr
    290                 295                 300
Thr Thr Thr Pro Phe Leu Asp Arg Glu Lys Cys Asp Thr Tyr Gln Leu
305                 310                 315                 320
Ile Met Glu Val Arg Asp Met Gly Gly Gln Pro Phe Gly Leu Phe Asn
                325                 330                 335
Thr Gly Thr Ile Thr Ile Ser Leu Glu Asp Glu Asn Asp Asn Pro Pro
            340                 345                 350
Ser Phe Thr Glu Thr Ser Tyr Val Thr Glu Val Glu Glu Asn Arg Ile
        355                 360                 365
Asp Val Glu Ile Leu Arg Met Lys Val Gln Asp Gln Asp Leu Pro Asn
```

370 375 380
Thr Pro His Ser Lys Ala Val Tyr Lys Ile Leu Gln Gly Asn Glu Asn
385 390 395 400
Gly Asn Phe Ile Ile Ser Thr Asp Pro Asn Thr Asn Glu Gly Val Leu
405 410 415
Cys Val Val Lys Pro Leu Asn Tyr Glu Val Asn Arg Gln Val Ile Leu
420 425 430
Gln Val Gly Val Ile Asn Glu Ala Gln Phe Ser Lys Ala Ala Ser Ser
435 440 445
Gln Thr Pro Thr Met Cys Thr Thr Thr Val Thr Val Lys Ile Ile Asp
450 455 460
Ser Asp Glu Gly Pro Glu Cys His Pro Pro Val Lys Val Ile Gln Ser
465 470 475 480
Gln Asp Gly Phe Pro Ala Gly Gln Glu Leu Leu Gly Tyr Lys Ala Leu
485 490 495
Asp Pro Glu Ile Ser Ser Gly Glu Gly Leu Arg Tyr Gln Lys Leu Gly
500 505 510
Asp Glu Asp Asn Trp Phe Glu Ile Asn Gln His Thr Gly Asp Leu Arg
515 520 525
Thr Leu Lys Val Leu Asp Arg Glu Ser Lys Phe Val Lys Asn Asn Gln
530 535 540
Tyr Asn Ile Ser Val Val Ala Gly Asp Ala Val Gly Arg Ser Cys Thr
545 550 555 560
Gly Thr Leu Val Val His Leu Asp Asp Tyr Asn Asp His Ala Pro Gln
565 570 575
Ile Asp Lys Glu Val Thr Ile Cys Gln Asn Asn Glu Asp Phe Val Val
580 585 590
Leu Lys Pro Val Asp Pro Asp Gly Pro Glu Asn Gly Pro Pro Phe Gln
595 600 605
Phe Phe Leu Asp Asn Ser Ala Ser Lys Asn Trp Asn Ile Lys Lys Lys
610 615 620
Asp Gly Lys Thr Ala Ile Leu Arg Gln Arg Gln Asn Leu Asp Tyr Asn
625 630 635 640
Tyr Tyr Ser Val Pro Ile Gln Ile Lys Asp Arg His Gly Leu Val Ala
645 650 655
Thr His Met Leu Thr Val Arg Val Cys Asp Cys Ser Thr Pro Ser Glu
660 665 670
Cys Thr Met Lys Asp Lys Ser Thr Arg Asp Val Arg Pro Asn Val Ile
675 680 685
Leu Gly Arg Trp Ala Ile Leu Ala Met Val Leu Gly Ser Val Leu Leu
690 695 700
Leu Cys Ile Leu Phe Thr Cys Phe Cys Val Thr Ala Lys Arg Thr Val
705 710 715 720
Lys Lys Cys Phe Pro Glu Asp Ile Ala Gln Gln Asn Leu Ile Val Ser
725 730 735
Asn Thr Glu Gly Pro Gly Glu Glu Val Thr Glu Ala Asn Ile Arg Leu
740 745 750
Pro Met Gln Thr Ser Asn Ile Cys Asp Thr Ser Met Ser Val Gly Thr
755 760 765
Val Gly Gly Gln Gly Ile Lys Thr Gln Gln Ser Phe Glu Met Val Lys
770 775 780
Gly Gly Tyr Thr Leu Asp Ser Asn Lys Gly Gly Gly His Gln Thr Leu
785 790 795 800
Glu Ser Val Lys Gly Val Gly Gln Gly Asp Thr Gly Arg Tyr Ala Tyr
805 810 815
Thr Asp Trp Gln Ser Phe Thr Gln Pro Arg Leu Gly Glu Glu Ser Ile
820 825 830
Arg Gly His Thr Leu Ile Lys Asn *
835 840

<210> 1429
<211> 262
<212> PRT
<213> Homo sapiens

<400> 1429
Met Glu Leu Leu Gln Val Thr Ile Leu Phe Leu Leu Pro Ser Ile Cys
1 5 10 15
Ser Ser Asn Ser Thr Gly Val Leu Glu Ala Ala Asn Asn Ser Leu Val
20 25 30
Val Thr Thr Thr Lys Pro Ser Ile Thr Thr Pro Asn Thr Glu Ser Leu
35 40 45
Gln Lys Asn Val Val Thr Pro Thr Thr Gly Thr Thr Pro Lys Gly Thr
50 55 60
Ile Thr Asn Glu Leu Leu Lys Met Ser Leu Met Ser Thr Ala Thr Phe
65 70 75 80
Leu Thr Ser Lys Asp Glu Gly Leu Lys Ala Thr Thr Thr Asp Val Arg
85 90 95
Lys Asn Asp Ser Ile Ile Ser Asn Val Thr Val Thr Ser Val Thr Leu
100 105 110
Pro Asn Ala Val Ser Thr Leu Gln Ser Ser Lys Pro Lys Thr Glu Thr
115 120 125
Gln Ser Ser Ile Lys Thr Thr Glu Ile Pro Gly Ser Val Leu Gln Pro
130 135 140
Asp Ala Ser Pro Ser Lys Thr Gly Thr Leu Thr Ser Ile Pro Val Thr
145 150 155 160
Ile Pro Glu Asn Thr Ser Gln Ser Gln Val Ile Gly Thr Glu Gly Gly
165 170 175
Lys Asn Ala Ser Thr Ser Ala Thr Ser Arg Ser Tyr Ser Ser Ile Ile
180 185 190
Leu Pro Val Val Ile Ala Leu Ile Val Ile Thr Leu Ser Val Phe Val
195 200 205
Leu Val Gly Leu Tyr Arg Met Cys Trp Lys Ala Asp Pro Gly Thr Pro
210 215 220
Glu Asn Gly Asn Asp Gln Pro Gln Ser Asp Lys Glu Ser Val Lys Leu
225 230 235 240
Leu Thr Val Lys Thr Ile Ser His Glu Ser Gly Glu His Ser Ala Gln
245 250 255
Gly Lys Thr Lys Asn *
260 261

<210> 1430
<211> 66
<212> PRT
<213> Homo sapiens

<400> 1430
Met Ser Tyr Thr Ala Phe Leu Ser Val Cys Cys Leu Pro Leu Leu Pro
1 5 10 15
Leu Cys Asp Phe Ala Leu Tyr Val Leu Leu Asp Lys Phe Lys Gly Gly
20 25 30
Phe Arg Gln Gln Asn Ser Pro Gln Ser Ile Tyr Gln His Asn Pro Tyr

```
        35                  40                  45
Gln Asn Pro Asn Asn Val Leu Ile Phe Leu Gln Lys Trp Lys Asn Arg
    50                  55                  60
Cys  *
 65
```

<210> 1431
<211> 437
<212> PRT
<213> Homo sapiens

<400> 1431

```
Met Leu Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp Cys
  1               5                  10                  15
Ser Gln Ser Leu Ala Ala Ala Ala Ala Val Ala Ala Ala Gly Gly Arg
             20                  25                  30
Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu Thr Thr Ile
         35                  40                  45
Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys Phe Arg Asp Glu
    50                  55                  60
Val Glu Asp Asp Tyr Phe Arg Thr Trp Ser Pro Gly Lys Pro Phe Asp
 65                  70                  75                  80
Gln Ala Leu Asp Pro Ala Lys Asp Pro Cys Leu Lys Met Lys Cys Ser
                 85                  90                  95
Arg His Lys Val Cys Ile Ala Gln Asp Ser Gln Thr Ala Val Cys Ile
            100                 105                 110
Ser His Arg Arg Leu Thr His Arg Met Lys Glu Ala Gly Val Asp His
        115                 120                 125
Arg Gln Trp Arg Gly Pro Ile Leu Ser Thr Cys Lys Gln Cys Pro Val
    130                 135                 140
Val Tyr Pro Ser Pro Val Cys Gly Ser Asp Gly His Thr Tyr Ser Phe
145                 150                 155                 160
Gln Cys Lys Leu Glu Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser
                165                 170                 175
Val Lys Cys Glu Gly His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser
            180                 185                 190
Thr Ser Arg Asn Val Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu
        195                 200                 205
Val Ala Asn Arg Leu Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly
    210                 215                 220
Ser Gln Asn Lys Lys Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg
225                 230                 235                 240
Phe Asp Thr Ser Ile Leu Pro Ile Cys Lys Asp Ser Leu Gly Trp Met
                245                 250                 255
Phe Asn Arg Leu Asp Thr Asn Tyr Asp Leu Leu Leu Asp Gln Ser Glu
            260                 265                 270
Leu Arg Ser Ile Tyr Leu Asp Lys Asn Glu Gln Cys Thr Lys Ala Phe
        275                 280                 285
Phe Asn Ser Cys Asp Thr Tyr Lys Asp Ser Leu Ile Ser Asn Asn Glu
    290                 295                 300
Trp Cys Tyr Cys Phe Gln Arg Gln Gln Asp Pro Pro Cys Gln Thr Glu
305                 310                 315                 320
Leu Ser Asn Ile Gln Lys Arg Gln Gly Val Lys Lys Leu Leu Gly Gln
                325                 330                 335
Tyr Ile Pro Leu Cys Asp Glu Asp Gly Tyr Tyr Lys Pro Thr Gln Cys
            340                 345                 350
```

His Gly Ser Val Gly Gln Cys Trp Cys Val Asp Arg Tyr Gly Asn Glu
355 360 365
Val Met Gly Ser Arg Ile Asn Gly Val Ala Asp Cys Ala Ile Asp Phe
370 375 380
Glu Ile Ser Gly Asp Phe Ala Ser Gly Asp Phe His Glu Trp Thr Asp
385 390 395 400
Asp Glu Asp Asp Glu Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu
405 410 415
Asp Asp Asp Glu Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His
420 425 430
Asp Val Tyr Ile *
435 436

<210> 1432
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1432
Met Ser Tyr Val Glu Ile Leu Ile Pro Val Leu Leu Cys Leu His Ala
1 5 10 15
Phe Phe Pro Ser Ser Arg Arg His Val Ala Trp Phe Leu Ile Phe Ile
20 25 30
Cys Lys Phe Phe Lys Phe Cys Leu Ile Leu Lys Phe Ile Ile Leu Ile
35 40 45
Leu Asn Tyr Leu *
50 52

<210> 1433
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1433
Met Glu Leu Lys Gly Phe Trp Leu Cys Leu Phe Leu Arg Phe Val Lys
1 5 10 15
Trp Phe Val Asn Lys Gly Met Ile Leu Cys Thr Leu Phe Tyr Asn Leu
20 25 30
Ile Tyr Ser Leu Tyr Asn Met Cys Trp Thr Val Leu Trp Ile Arg Lys
35 40 45
Tyr Gln Thr Leu Leu Lys Glu Ser Phe Phe Ser Leu Asn Thr Phe Leu
50 55 60
Phe Lys Asp Lys Ala Ser Thr Ser Ile Pro Leu *
65 70 75

<210> 1434
<211> 169
<212> PRT
<213> Homo sapiens

<400> 1434
Met Glu Ser Trp Trp Gly Leu Pro Cys Leu Ala Phe Leu Cys Phe Leu
1 5 10 15
Met His Ala Arg Gly Gln Arg Asp Phe Asp Leu Ala Asp Ala Leu Asp
20 25 30
Asp Pro Glu Pro Thr Lys Lys Pro Asn Ser Asp Ile Tyr Pro Lys Pro
35 40 45
Lys Pro Pro Tyr Tyr Pro Gln Pro Glu Asn Pro Asp Ser Gly Gly Asn
50 55 60
Ile Tyr Pro Arg Pro Lys Pro Arg Pro Gln Pro Gln Pro Gly Asn Ser
65 70 75 80
Gly Asn Ser Gly Gly Ser Tyr Phe Asn Asp Val Asp Arg Asp Asp Gly
85 90 95
Arg Tyr Pro Pro Arg Pro Arg Pro Arg Pro Pro Ala Gly Gly Gly Gly
100 105 110
Gly Gly Tyr Ser Ser Tyr Gly Asn Ser Asp Asn Thr His Gly Gly Asp
115 120 125
His His Ser Thr Tyr Gly Asn Pro Glu Gly Asn Met Val Ala Lys Ile
130 135 140
Val Ser Pro Ile Val Ser Val Val Val Val Thr Leu Leu Gly Ala Ala
145 150 155 160
Ala Gln Leu Phe Gln Thr Lys Gln *
165 168

<210> 1435
<211> 162
<212> PRT
<213> Homo sapiens

<400> 1435
Met Arg Phe Val Thr Leu Ser Ser Ala Cys Leu Cys Pro Cys Pro Leu
1 5 10 15
Gly Pro Cys Trp Thr Arg His Pro Ser Tyr Gly Asn Leu His Glu Ala
20 25 30
Ser Thr Ser Leu Pro Pro Arg His Trp Thr Gly Ala Arg Lys Trp Asn
35 40 45
Glu Ser Ser His Cys Leu Lys Ser Trp Arg Pro Ser Ser Ala Ser Gly
50 55 60
Ser Pro Glu Asn Leu Gly Ser Asp Arg Arg Thr Glu Thr Glu Gly Arg
65 70 75 80
Glu Arg Asp Cys Asp Arg Glu Ala Glu Glu Gly Asp Arg Val Arg Glu
85 90 95
Glu Gln Asn Ser Leu Gln Trp Glu Gln Arg Gln Lys Cys Gly Gly Pro
100 105 110
Thr Gly Arg Gly Gly Arg Glu Gly Glu Gly Arg Arg Glu Gly Gln Leu
115 120 125
Pro Val Gln Val Ala Val Arg Ala Leu Gly Leu Gly Arg Gly Thr Leu
130 135 140
Leu Leu Leu Ala Ser His Thr Gly Ser Ile Arg Gly Pro Arg Glu Gln
145 150 155 160
Val Ser
162

<210> 1436

<211> 77
<212> PRT
<213> Homo sapiens

<400> 1436
Met Trp Ile Val Leu Leu Gly Gly Phe Val Gly Pro Leu Tyr Leu Thr
1 5 10 15
Pro Ala Pro Ser Pro Cys Thr His Thr Leu Gly Val Arg Ala Val Pro
20 25 30
Leu Val Thr Gly Leu Thr Ser Gln Leu Trp Leu Asn Ala Ala Gly Glu
35 40 45
Ser Leu Thr Tyr Arg Met Trp Ser Met Ala Ser Met Thr Glu Gln Pro
50 55 60
Glu Leu Ser Glu Met Tyr Met Leu Pro Thr Leu His Glu
65 70 75 77

<210> 1437
<211> 85
<212> PRT
<213> Homo sapiens

<400> 1437
Met Cys Ser Leu Pro Arg His Leu Leu Phe Leu Ile Ile Phe Arg Ala
1 5 10 15
Tyr Ser Leu Ala Val Asp Leu Ser Thr His Ser Leu Thr Thr Ala Lys
20 25 30
Phe Pro Ser Pro Ile Val Leu Pro Thr Leu Tyr Arg Ser Val Ile Val
35 40 45
Ala Gly Ile Trp Lys Pro Ser Ser Asp Thr Ser Ser Pro Gly Pro Ser
50 55 60
Phe Ser Ser Ile Glu Leu Gln Thr Leu Val Asp Ala Ser Asp Val Glu
65 70 75 80
Glu Pro Pro Cys *
84

<210> 1438
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1438
Met Ile Gly Asp Ile Leu Leu Phe Gly Thr Leu Leu Met Asn Ala Gly
1 5 10 15
Ala Val Leu Asn Phe Lys Leu Lys Lys Lys Asp Thr Gln Gly Phe Gly
20 25 30
Glu Glu Ser Arg Glu Pro Ser Thr Gly Asp Asn Ile Arg Glu Phe Leu
35 40 45
Leu Ser Leu Arg Tyr Phe Arg Ile Phe Ile Ala Leu Trp Asn Ile Phe
50 55 60
Met Met Phe Cys Met Ile Val Leu Phe Gly Ser *
65 70 75

<210> 1439
<211> 425
<212> PRT
<213> Homo sapiens

<400> 1439
Met Ser Leu Thr Ile Trp Thr Val Cys Gly Val Leu Ser Leu Phe Gly
1 5 10 15
Ala Leu Ser Tyr Ala Glu Leu Gly Thr Thr Ile Lys Lys Ser Gly Gly
20 25 30
His Tyr Thr Tyr Ile Leu Glu Val Phe Gly Pro Leu Pro Ala Phe Val
35 40 45
Arg Val Trp Val Glu Leu Leu Ile Ile Arg Pro Ala Ala Thr Ala Val
50 55 60
Ile Ser Leu Ala Phe Gly Arg Tyr Ile Leu Glu Pro Phe Phe Ile Gln
65 70 75 80
Cys Glu Ile Pro Glu Leu Ala Ile Lys Leu Ile Thr Ala Val Gly Ile
85 90 95
Thr Val Val Met Val Leu Asn Ser Met Ser Val Ser Trp Ser Ala Arg
100 105 110
Ile Gln Ile Phe Leu Thr Phe Cys Lys Leu Thr Ala Ile Leu Ile Ile
115 120 125
Ile Val Pro Gly Val Met Gln Leu Ile Lys Gly Gln Thr Gln Asn Phe
130 135 140
Lys Asp Ala Phe Ser Gly Arg Asp Ser Ser Ile Thr Arg Leu Pro Leu
145 150 155 160
Ala Phe Tyr Tyr Gly Met Tyr Ala Tyr Ala Gly Trp Phe Tyr Leu Asn
165 170 175
Phe Val Thr Glu Glu Val Glu Asn Pro Glu Lys Thr Ile Pro Leu Ala
180 185 190
Ile Cys Ile Ser Met Ala Ile Val Thr Ile Gly Tyr Val Leu Thr Asn
195 200 205
Val Ala Tyr Phe Thr Thr Ile Asn Ala Glu Glu Leu Leu Leu Ser Asn
210 215 220
Ala Val Ala Val Thr Phe Ser Glu Arg Leu Leu Gly Asn Phe Ser Leu
225 230 235 240
Ala Val Pro Ile Phe Val Ala Leu Ser Cys Phe Gly Ser Met Asn Gly
245 250 255
Gly Val Phe Ala Val Ser Arg Leu Phe Tyr Val Ala Ser Arg Glu Gly
260 265 270
His Leu Pro Glu Ile Leu Ser Met Ile His Val Arg Lys His Thr Pro
275 280 285
Leu Pro Ala Val Ile Val Leu His Pro Leu Thr Met Ile Met Leu Phe
290 295 300
Ser Gly Asp Leu Asp Ser Leu Leu Asn Phe Leu Ser Phe Ala Arg Trp
305 310 315 320
Leu Phe Ile Gly Leu Ala Val Ala Gly Leu Ile Tyr Leu Arg Tyr Lys
325 330 335
Cys Pro Asp Met His Arg Pro Phe Lys Val Pro Leu Phe Ile Pro Ala
340 345 350
Leu Phe Ser Phe Thr Cys Leu Phe Met Val Ala Leu Ser Leu Tyr Ser
355 360 365
Asp Pro Phe Ser Thr Gly Ile Gly Phe Val Ile Thr Leu Thr Gly Val
370 375 380
Pro Ala Tyr Tyr Leu Phe Ile Ile Trp Asp Lys Lys Pro Arg Trp Phe
385 390 395 400

```
Arg Ile Met Ser Glu Lys Ile Thr Arg Thr Leu Gln Ile Ile Leu Glu
                405                 410                 415
Val Val Pro Glu Glu Asp Lys Leu  *
            420                 424
```

<210> 1440
<211> 70
<212> PRT
<213> Homo sapiens

<400> 1440

```
Met Ser Val Phe Trp Gly Phe Val Gly Phe Leu Val Pro Trp Phe Ile
  1               5                  10                  15
Pro Lys Gly Pro Asn Arg Gly Val Ile Ile Thr Met Leu Val Thr Cys
             20                  25                  30
Ser Val Cys Cys Tyr Leu Phe Trp Leu Ile Ala Ile Leu Ala Gln Leu
         35                  40                  45
Asn Pro Leu Phe Gly Pro Gln Leu Lys Asn Glu Thr Ile Trp Tyr Leu
     50                  55                  60
Lys Tyr His Trp Pro  *
 65              69
```

<210> 1441
<211> 1691
<212> PRT
<213> Homo sapiens

<400> 1441

```
Met Trp Ser Leu His Ile Val Leu Met Arg Cys Ser Phe Arg Leu Thr
  1               5                  10                  15
Lys Ser Leu Ala Thr Gly Pro Trp Ser Leu Ile Leu Ile Leu Phe Ser
             20                  25                  30
Val Gln Tyr Val Tyr Gly Ser Gly Lys Lys Tyr Ile Gly Pro Cys Gly
         35                  40                  45
Gly Arg Asp Cys Ser Val Cys His Cys Val Pro Glu Lys Gly Ser Arg
     50                  55                  60
Gly Pro Pro Gly Pro Pro Gly Pro Gln Gly Pro Ile Gly Pro Leu Gly
 65                  70                  75                  80
Ala Pro Gly Pro Ile Gly Leu Ser Gly Glu Lys Gly Met Arg Gly Asp
                 85                  90                  95
Arg Gly Pro Pro Gly Ala Ala Gly Asp Lys Gly Asp Lys Gly Pro Thr
            100                 105                 110
Gly Val Pro Gly Phe Pro Gly Leu Asp Gly Ile Pro Gly His Pro Gly
        115                 120                 125
Pro Pro Gly Pro Arg Gly Lys Pro Gly Met Ser Gly His Asn Gly Ser
    130                 135                 140
Arg Gly Asp Pro Gly Phe Pro Gly Gly Arg Gly Ala Leu Gly Pro Gly
145                 150                 155                 160
Gly Pro Leu Gly His Pro Gly Glu Lys Gly Glu Lys Gly Asn Ser Val
                165                 170                 175
Phe Ile Leu Gly Ala Val Lys Gly Ile Gln Gly Asp Arg Gly Asp Pro
            180                 185                 190
Gly Leu Pro Gly Leu Pro Gly Ser Trp Gly Ala Gly Gly Pro Ala Gly
```

```
        195                 200                 205
Pro Thr Gly Tyr Pro Gly Glu Pro Gly Leu Val Gly Pro Pro Gly Gln
    210                 215                 220
Pro Gly Arg Pro Gly Leu Lys Gly Asn Pro Gly Val Gly Val Lys Gly
225                 230                 235                 240
Gln Met Gly Asp Pro Gly Glu Val Gly Gln Gln Gly Ser Pro Gly Pro
                245                 250                 255
Thr Leu Leu Val Glu Pro Pro Asp Phe Cys Leu Tyr Lys Gly Glu Lys
            260                 265                 270
Gly Ile Lys Gly Ile Pro Gly Met Val Gly Leu Pro Gly Pro Pro Gly
        275                 280                 285
Arg Lys Gly Glu Ser Gly Ile Gly Ala Lys Gly Glu Lys Gly Ile Pro
    290                 295                 300
Gly Phe Pro Gly Pro Arg Gly Asp Pro Gly Ser Tyr Gly Ser Pro Gly
305                 310                 315                 320
Phe Pro Gly Leu Lys Gly Glu Leu Gly Leu Val Gly Asp Pro Gly Leu
                325                 330                 335
Phe Gly Leu Ile Gly Pro Lys Gly Asp Pro Gly Asn Arg Gly His Pro
            340                 345                 350
Gly Pro Pro Gly Val Leu Val Thr Pro Pro Leu Pro Leu Lys Gly Pro
        355                 360                 365
Pro Gly Asp Pro Gly Phe Pro Gly Arg Tyr Gly Glu Thr Gly Asp Val
    370                 375                 380
Gly Pro Pro Gly Pro Pro Gly Leu Leu Gly Arg Pro Gly Glu Ala Cys
385                 390                 395                 400
Ala Gly Met Ile Gly Pro Pro Gly Pro Gln Gly Phe Pro Gly Leu Pro
                405                 410                 415
Gly Leu Pro Gly Glu Ala Gly Ile Pro Gly Arg Pro Asp Ser Ala Pro
            420                 425                 430
Gly Lys Pro Gly Lys Pro Gly Ser Pro Gly Leu Pro Gly Ala Pro Gly
        435                 440                 445
Leu Gln Gly Leu Pro Gly Ser Ser Val Ile Tyr Cys Ser Val Gly Asn
    450                 455                 460
Pro Gly Pro Gln Gly Ile Lys Gly Lys Val Gly Pro Pro Gly Gly Arg
465                 470                 475                 480
Gly Pro Lys Gly Glu Lys Gly Asn Glu Gly Leu Cys Ala Cys Glu Pro
                485                 490                 495
Gly Pro Met Gly Pro Pro Gly Pro Pro Gly Leu Pro Gly Arg Gln Gly
            500                 505                 510
Ser Lys Gly Asp Leu Gly Leu Pro Gly Trp Leu Gly Thr Lys Gly Asp
        515                 520                 525
Pro Gly Pro Pro Gly Ala Glu Gly Pro Pro Gly Leu Pro Gly Lys His
    530                 535                 540
Gly Ala Ser Gly Pro Pro Gly Asn Lys Gly Ala Lys Gly Asp Met Val
545                 550                 555                 560
Val Ser Arg Val Lys Gly His Lys Gly Glu Arg Gly Pro Asp Gly Pro
                565                 570                 575
Pro Gly Phe Pro Gly Gln Pro Gly Ser His Gly Arg Asp Gly His Ala
            580                 585                 590
Gly Glu Lys Gly Asp Pro Gly Pro Pro Gly Asp His Glu Asp Ala Thr
        595                 600                 605
Pro Gly Gly Lys Gly Phe Pro Gly Pro Leu Gly Pro Pro Gly Lys Ala
    610                 615                 620
Gly Pro Val Gly Pro Pro Gly Leu Gly Phe Pro Gly Pro Pro Gly Glu
625                 630                 635                 640
Arg Gly His Pro Gly Val Pro Gly His Pro Gly Val Arg Gly Pro Asp
                645                 650                 655
Gly Leu Lys Gly Gln Lys Gly Asp Thr Ile Ser Cys Asn Val Thr Tyr
            660                 665                 670
```

```
Pro Gly Arg His Gly Pro Pro Gly Phe Asp Gly Pro Pro Gly Pro Lys
        675                 680                 685
Gly Phe Pro Gly Pro Gln Gly Ala Pro Gly Leu Ser Gly Ser Asp Gly
    690                 695                 700
His Lys Gly Arg Pro Gly Thr Pro Gly Thr Ala Glu Ile Pro Gly Pro
705                 710                 715                 720
Pro Gly Phe Arg Gly Asp Met Gly Asp Pro Gly Phe Gly Gly Glu Lys
                725                 730                 735
Gly Ser Ser Pro Val Gly Pro Pro Gly Pro Pro Gly Ser Pro Gly Val
            740                 745                 750
Asn Gly Gln Lys Gly Ile Pro Gly Asp Pro Ala Phe Gly His Leu Gly
        755                 760                 765
Pro Pro Gly Lys Arg Gly Leu Ser Gly Val Pro Gly Ile Lys Gly Pro
    770                 775                 780
Arg Gly Asp Pro Gly Cys Pro Gly Ala Glu Gly Pro Ala Gly Ile Pro
785                 790                 795                 800
Gly Phe Leu Gly Leu Lys Gly Pro Lys Gly Arg Glu Gly His Ala Gly
                805                 810                 815
Phe Pro Gly Val Pro Gly Pro Pro Gly His Ser Cys Glu Arg Gly Ala
            820                 825                 830
Pro Gly Ile Pro Gly Gln Pro Gly Leu Pro Gly Tyr Pro Gly Ser Pro
        835                 840                 845
Gly Ala Pro Gly Gly Lys Gly Gln Pro Gly Asp Val Gly Pro Pro Gly
    850                 855                 860
Pro Ala Gly Met Lys Gly Leu Pro Gly Leu Pro Gly Arg Pro Gly Ala
865                 870                 875                 880
His Gly Pro Pro Gly Leu Pro Gly Ile Pro Gly Pro Phe Gly Asp Asp
                885                 890                 895
Gly Leu Pro Gly Pro Pro Gly Pro Lys Gly Pro Arg Gly Leu Pro Gly
            900                 905                 910
Phe Pro Gly Phe Pro Gly Glu Arg Gly Lys Pro Gly Ala Glu Gly Cys
        915                 920                 925
Pro Gly Ala Lys Gly Glu Pro Gly Glu Lys Gly Met Ser Gly Leu Pro
    930                 935                 940
Gly Asp Arg Gly Leu Arg Gly Ala Lys Gly Ala Ile Gly Pro Pro Gly
945                 950                 955                 960
Asp Glu Gly Glu Met Ala Ile Ile Ser Gln Lys Gly Thr Pro Gly Glu
                965                 970                 975
Pro Gly Pro Pro Gly Asp Asp Gly Phe Pro Gly Glu Arg Gly Asp Lys
            980                 985                 990
Gly Thr Pro Gly Met Gln Gly Arg Arg Gly Glu Leu Gly Arg Tyr Gly
        995                 1000                1005
Pro Pro Gly Phe His Arg Gly Glu Pro Gly Glu Lys Gly Gln Pro Gly
    1010                1015                1020
Pro Pro Gly Pro Pro Gly Pro Pro Gly Ser Thr Gly Leu Arg Gly Phe
1025                1030                1035                1040
Ile Gly Phe Pro Gly Leu Pro Gly Asp Gln Gly Glu Pro Gly Ser Pro
                1045                1050                1055
Gly Pro Pro Gly Phe Ser Gly Ile Asp Gly Ala Arg Gly Pro Lys Gly
            1060                1065                1070
Asn Lys Gly Asp Pro Ala Ser His Phe Gly Pro Pro Gly Pro Lys Gly
        1075                1080                1085
Glu Pro Gly Ser Pro Gly Cys Pro Gly His Phe Gly Ala Ser Gly Glu
    1090                1095                1100
Gln Gly Leu Pro Gly Ile Gln Gly Pro Arg Gly Ser Pro Gly Arg Pro
1105                1110                1115                1120
Gly Pro Pro Gly Ser Ser Gly Pro Pro Gly Cys Pro Gly Asp His Gly
                1125                1130                1135
Met Pro Gly Leu Arg Gly Gln Pro Gly Glu Met Gly Asp Pro Gly Pro
```

1140 1145 1150
Arg Gly Leu Gln Gly Asp Pro Gly Ile Pro Gly Pro Pro Gly Ile Lys
1155 1160 1165
Gly Pro Ser Gly Ser Pro Gly Leu Asn Gly Leu His Gly Leu Lys Gly
1170 1175 1180
Gln Lys Gly Thr Lys Gly Ala Ser Gly Leu His Asp Val Gly Pro Pro
1185 1190 1195 1200
Gly Pro Val Gly Ile Pro Gly Leu Lys Gly Glu Arg Gly Asp Pro Gly
1205 1210 1215
Ser Pro Gly Ile Ser Pro Pro Gly Pro Arg Gly Lys Lys Gly Pro Pro
1220 1225 1230
Gly Pro Pro Gly Ser Ser Gly Pro Pro Gly Pro Ala Gly Ala Thr Gly
1235 1240 1245
Arg Ala Pro Lys Asp Ile Pro Asp Pro Gly Pro Pro Gly Asp Gln Gly
1250 1255 1260
Pro Pro Gly Pro Asp Gly Pro Arg Gly Ala Pro Gly Pro Pro Gly Leu
1265 1270 1275 1280
Pro Gly Ser Val Asp Leu Leu Arg Gly Glu Pro Gly Asp Cys Gly Leu
1285 1290 1295
Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Tyr Lys
1300 1305 1310
Gly Phe Pro Gly Cys Asp Gly Lys Asp Gly Gln Lys Gly Pro Val Gly
1315 1320 1325
Phe Pro Gly Pro Gln Gly Pro His Gly Phe Pro Gly Pro Pro Gly Glu
1330 1335 1340
Lys Gly Leu Pro Gly Pro Pro Gly Arg Lys Gly Pro Thr Gly Leu Pro
1345 1350 1355 1360
Gly Pro Arg Gly Glu Pro Gly Pro Pro Ala Asp Val Asp Asp Cys Pro
1365 1370 1375
Arg Ile Pro Gly Leu Pro Gly Ala Pro Gly Met Arg Gly Pro Glu Gly
1380 1385 1390
Ala Met Gly Leu Pro Gly Met Arg Gly Pro Ser Gly Pro Gly Cys Lys
1395 1400 1405
Gly Glu Pro Gly Leu Asp Gly Arg Arg Gly Val Asp Gly Val Pro Gly
1410 1415 1420
Ser Pro Gly Pro Pro Gly Arg Lys Gly Asp Thr Gly Glu Asp Gly Tyr
1425 1430 1435 1440
Pro Gly Gly Pro Gly Pro Pro Gly Pro Ile Gly Asp Pro Gly Pro Lys
1445 1450 1455
Gly Phe Gly Pro Gly Tyr Leu Gly Gly Phe Leu Leu Val Leu His Ser
1460 1465 1470
Gln Thr Asp Gln Glu Pro Thr Cys Pro Leu Gly Met Pro Arg Leu Trp
1475 1480 1485
Thr Gly Tyr Ser Leu Leu Tyr Leu Glu Gly Gln Glu Lys Ala His Asn
1490 1495 1500
Gln Asp Leu Gly Leu Ala Gly Ser Cys Leu Pro Val Phe Ser Thr Leu
1505 1510 1515 1520
Pro Phe Ala Tyr Cys Asn Ile His Gln Val Cys His Tyr Ala Gln Arg
1525 1530 1535
Asn Asp Arg Ser Tyr Trp Leu Ala Ser Ala Ala Pro Leu Pro Met Met
1540 1545 1550
Pro Leu Ser Glu Glu Ala Ile Arg Pro Tyr Val Ser Arg Cys Ala Val
1555 1560 1565
Cys Glu Ala Pro Ala Gln Ala Val Ala Val His Ser Gln Asp Gln Ser
1570 1575 1580
Ile Pro Pro Cys Pro Gln Thr Trp Arg Ser Leu Trp Ile Gly Tyr Ser
1585 1590 1595 1600
Phe Leu Met His Thr Gly Ala Gly Asp Gln Gly Gly Gly Gln Ala Leu
1605 1610 1615

Met Ser Pro Gly Ser Cys Leu Glu Asp Phe Arg Ala Ala Pro Phe Leu
1620 1625 1630
Glu Cys Gln Gly Arg Gln Gly Thr Cys His Phe Phe Ala Asn Lys Tyr
1635 1640 1645
Ser Phe Trp Leu Thr Thr Val Lys Ala Asp Phe Glu Phe Ser Ser Ala
1650 1655 1660
Pro Ala Pro Asp Thr Leu Lys Glu Ser Gln Ala Gln Arg Gln Lys Ile
1665 1670 1675 1680
Ser Arg Cys Gln Val Cys Val Lys Tyr Ser *
1685 1690

<210> 1442
<211> 153
<212> PRT
<213> Homo sapiens

<400> 1442
Met Gly Val Met Ala Pro Arg Thr Leu Leu Leu Leu Leu Leu Gly Ala
1 5 10 15
Leu Ala Leu Thr Glu Thr Trp Ala Gly Glu Cys Gly Val Gly Arg Glu
20 25 30
Arg Ala Ser Ala Gly Arg Ser Glu Trp Pro Ala Arg Pro Gly Glu Pro
35 40 45
Arg Arg Glu Glu Gly Arg Ala Gly Leu Ser Leu Ser Ser Pro Pro Gly
50 55 60
Ser His Ser Leu Arg Tyr Phe Ser Thr Ala Val Ser Gln Pro Gly Arg
65 70 75 80
Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr Val Asp Asp Thr Glu Phe
85 90 95
Val Arg Phe Asp Ser Asp Ser Val Ser Pro Arg Met Glu Arg Arg Ala
100 105 110
Pro Trp Val Glu Gln Glu Gly Leu Glu Tyr Trp Asp Gln Glu Thr Arg
115 120 125
Asn Ala Lys Gly His Ala Gln Ile Tyr Arg Val Asn Leu Arg Thr Leu
130 135 140
Leu Arg Tyr Tyr Asn Gln Ser Glu Ala
145 150 153

<210> 1443
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1443
Met Ser Leu Leu Cys Leu Lys Phe Phe Ser Gly Leu Trp Thr Ile Thr
1 5 10 15
Phe Ser Lys Gly Ala Lys Ile Ile His Trp Gly Arg Ser Leu Phe Asn
20 25 30
Trp Ile Ser Met Cys Lys Arg Met Lys Leu Asp Pro Tyr Ser Tyr His
35 40 45
Thr Gln Lys Leu Thr Gln Asn Gly Ser *
50 55 57

<210> 1444
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1444
Met Pro Val Pro Leu Ala Tyr Phe Gln Ser Ser Ile Val Leu Phe Pro
1 5 10 15
Leu Ile Phe Ser Leu Val Thr Cys Val Ser Leu Asp Gly Glu Pro Lys
20 25 30
Ser Val Val Gly Val Ile Ser Ile Ser Ala Tyr Tyr Arg Ala Ile Ser
35 40 45
Ile Leu Leu Ile Phe Ser Lys Ser Phe Cys Cys Ala Ser Leu Ala Gly
50 55 60
Val Leu Val Ile *
65 68

<210> 1445
<211> 826
<212> PRT
<213> Homo sapiens

<400> 1445
Met Gly Trp Leu Cys Ser Gly Leu Leu Phe Pro Val Ser Cys Leu Val
1 5 10 15
Leu Leu Gln Val Ala Ser Ser Gly Asn Met Lys Val Leu Gln Glu Pro
20 25 30
Thr Cys Val Ser Asp Tyr Met Ser Ile Ser Thr Cys Glu Trp Lys Met
35 40 45
Asn Gly Pro Thr Asn Cys Ser Thr Glu Leu Arg Leu Leu Tyr Gln Leu
50 55 60
Val Phe Leu Leu Ser Glu Ala His Thr Cys Val Pro Glu Asn Asn Gly
65 70 75 80
Gly Ala Gly Cys Val Cys His Leu Leu Met Asp Asp Val Val Ser Ala
85 90 95
Asp Asn Tyr Thr Leu Asp Leu Trp Ala Gly Gln Gln Leu Leu Trp Lys
100 105 110
Gly Ser Phe Lys Pro Ser Glu His Val Lys Pro Arg Ala Pro Gly Asn
115 120 125
Leu Thr Val His Thr Asn Val Ser Asp Thr Leu Leu Leu Thr Trp Ser
130 135 140
Asn Pro Tyr Pro Pro Asp Asn Tyr Leu Tyr Asn His Leu Thr Tyr Ala
145 150 155 160
Val Asn Ile Trp Ser Glu Asn Asp Pro Ala Asp Phe Arg Ile Tyr Asn
165 170 175
Val Thr Tyr Leu Glu Pro Ser Leu Arg Ile Ala Ala Ser Thr Leu Lys
180 185 190
Ser Gly Ile Ser Tyr Arg Ala Arg Val Arg Ala Trp Ala Gln Cys Tyr
195 200 205
Asn Thr Thr Trp Ser Glu Trp Ser Pro Ser Thr Lys Trp His Asn Ser
210 215 220
Tyr Arg Glu Pro Phe Glu Gln His Leu Leu Leu Gly Val Ser Val Ser
225 230 235 240

```
Cys Ile Val Ile Leu Ala Val Cys Leu Leu Cys Tyr Val Ser Ile Thr
                245                 250                 255
Lys Ile Lys Lys Glu Trp Trp Asp Gln Ile Pro Asn Pro Ala Arg Ser
            260                 265                 270
Arg Leu Val Ala Ile Ile Ile Gln Asp Ala Gln Gly Ser Gln Trp Glu
        275                 280                 285
Lys Arg Ser Arg Gly Gln Glu Pro Ala Lys Cys Pro His Trp Lys Asn
    290                 295                 300
Cys Leu Thr Lys Leu Leu Pro Cys Phe Leu Glu His Asn Met Lys Arg
305                 310                 315                 320
Asp Glu Asp Pro His Lys Ala Ala Lys Glu Met Pro Phe Gln Gly Ser
                325                 330                 335
Gly Lys Ser Ala Trp Cys Pro Val Glu Ile Ser Lys Thr Val Leu Trp
            340                 345                 350
Pro Glu Ser Ile Ser Val Val Arg Cys Val Glu Leu Phe Glu Ala Pro
        355                 360                 365
Val Glu Cys Glu Glu Glu Glu Glu Val Glu Glu Glu Lys Gly Ser Phe
    370                 375                 380
Cys Ala Ser Pro Glu Ser Ser Arg Asp Asp Phe Gln Glu Gly Arg Glu
385                 390                 395                 400
Gly Ile Val Ala Arg Leu Thr Glu Ser Leu Phe Leu Asp Leu Leu Gly
                405                 410                 415
Glu Glu Asn Gly Gly Phe Cys Gln Gln Asp Met Gly Glu Ser Cys Leu
            420                 425                 430
Leu Pro Pro Ser Gly Ser Thr Ser Ala His Met Pro Trp Asp Glu Phe
        435                 440                 445
Pro Ser Ala Gly Pro Lys Glu Ala Pro Pro Trp Gly Lys Glu Gln Pro
    450                 455                 460
Leu His Leu Glu Pro Ser Pro Pro Ala Ser Pro Thr Gln Ser Pro Asp
465                 470                 475                 480
Asn Leu Thr Cys Thr Glu Thr Pro Leu Val Ile Ala Gly Asn Pro Ala
                485                 490                 495
Tyr Arg Ser Phe Ser Asn Ser Leu Ser Gln Ser Pro Cys Pro Arg Glu
            500                 505                 510
Leu Gly Pro Asp Pro Leu Leu Ala Arg His Leu Glu Glu Val Glu Pro
        515                 520                 525
Glu Met Pro Cys Val Pro Gln Leu Ser Glu Pro Thr Thr Val Pro Gln
    530                 535                 540
Pro Glu Pro Glu Thr Trp Glu Gln Ile Leu Arg Arg Asn Val Leu Gln
545                 550                 555                 560
His Gly Ala Ala Ala Ala Pro Val Ser Ala Pro Thr Ser Gly Tyr Gln
                565                 570                 575
Glu Phe Val His Ala Val Glu Gln Gly Gly Thr Gln Ala Ser Ala Val
            580                 585                 590
Val Gly Leu Gly Pro Pro Gly Glu Ala Gly Tyr Lys Ala Phe Ser Ser
        595                 600                 605
Leu Leu Ala Ser Ser Ala Val Ser Pro Glu Lys Cys Gly Phe Gly Ala
    610                 615                 620
Ser Ser Gly Glu Glu Gly Tyr Lys Pro Phe Gln Asp Leu Ile Pro Gly
625                 630                 635                 640
Cys Pro Gly Asp Pro Ala Pro Val Pro Val Pro Leu Phe Thr Phe Gly
                645                 650                 655
Leu Asp Arg Glu Pro Pro Arg Ser Pro Gln Ser Ser His Leu Pro Ser
            660                 665                 670
Ser Ser Pro Glu His Leu Gly Leu Glu Pro Gly Glu Lys Val Glu Asp
        675                 680                 685
Met Pro Lys Pro Pro Leu Pro Gln Glu Gln Ala Thr Asp Pro Leu Val
    690                 695                 700
Asp Ser Leu Gly Ser Gly Ile Val Tyr Ser Ala Leu Thr Cys His Leu
```

705 710 715 720
Cys Gly His Leu Lys Gln Cys His Gly Gln Glu Asp Gly Gly Gln Thr
725 730 735
Pro Val Met Ala Ser Pro Cys Cys Gly Cys Cys Cys Gly Asp Arg Ala
740 745 750
Ser Pro Pro Thr Thr Pro Leu Arg Ala Pro Asp Pro Ser Pro Gly Gly
755 760 765
Val Pro Leu Glu Ala Ser Leu Cys Pro Ala Ser Leu Ala Pro Ser Gly
770 775 780
Ile Ser Glu Lys Ser Lys Ser Ser Ser Ser Phe His Pro Ala Pro Gly
785 790 795 800
Asn Ala Gln Ser Ser Ser Gln Thr Pro Lys Ile Val Asn Phe Val Ser
805 810 815
Val Gly Pro Thr Tyr Met Arg Val Ser *
820 825

<210> 1446
<211> 367
<212> PRT
<213> Homo sapiens

<400> 1446
Met Ala Leu Arg Phe Leu Leu Gly Phe Leu Leu Ala Gly Val Asp Leu
1 5 10 15
Gly Val Tyr Leu Met Arg Leu Glu Leu Cys Asp Pro Thr Gln Arg Leu
20 25 30
Arg Val Ala Leu Ala Gly Glu Leu Val Gly Val Gly Gly His Phe Leu
35 40 45
Phe Leu Gly Leu Ala Leu Val Ser Lys Asp Trp Arg Phe Leu Gln Arg
50 55 60
Met Ile Thr Ala Pro Cys Ile Leu Phe Leu Phe Tyr Gly Trp Pro Gly
65 70 75 80
Leu Phe Leu Glu Ser Ala Arg Trp Leu Ile Val Lys Arg Gln Ile Glu
85 90 95
Glu Ala Gln Ser Val Leu Arg Ile Leu Ala Glu Arg Asn Arg Pro His
100 105 110
Gly Gln Met Leu Gly Glu Glu Ala Gln Glu Ala Leu Gln Asp Leu Glu
115 120 125
Asn Thr Cys Pro Leu Pro Ala Thr Ser Ser Phe Ser Phe Ala Ser Leu
130 135 140
Leu Asn Tyr Arg Asn Ile Trp Lys Asn Leu Leu Ile Leu Gly Phe Thr
145 150 155 160
Asn Phe Ile Ala His Ala Ile Arg His Cys Tyr Gln Pro Val Gly Gly
165 170 175
Gly Gly Ser Pro Ser Asp Phe Tyr Leu Cys Ser Leu Leu Ala Ser Gly
180 185 190
Thr Ala Ala Leu Ala Cys Val Phe Leu Gly Val Thr Val Asp Arg Phe
195 200 205
Gly Arg Arg Gly Ile Leu Leu Leu Ser Met Thr Leu Thr Gly Ile Ala
210 215 220
Ser Leu Val Leu Leu Gly Leu Trp Asp Tyr Leu Asn Glu Ala Ala Ile
225 230 235 240
Thr Thr Phe Ser Val Leu Gly Leu Phe Ser Ser Gln Ala Ala Ala Ile
245 250 255
Leu Ser Thr Leu Leu Ala Ala Glu Val Ile Pro Thr Thr Val Arg Gly
260 265 270

Arg Gly Leu Gly Leu Ile Met Ala Leu Gly Ala Leu Gly Gly Leu Ser
275 280 285
Gly Pro Ala Gln Arg Leu His Met Gly His Gly Ala Phe Leu Gln His
290 295 300
Val Val Leu Ala Ala Cys Ala Leu Leu Cys Ile Leu Ser Ile Met Leu
305 310 315 320
Leu Pro Glu Thr Lys Arg Lys Leu Leu Pro Glu Val Leu Arg Asp Gly
325 330 335
Glu Leu Cys Arg Arg Pro Ser Leu Leu Arg Gln Pro Pro Pro Thr Arg
340 345 350
Cys Asp His Val Pro Leu Leu Ala Thr Pro Asn Pro Ala Leu *
355 360 365 366

<210> 1447
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1447
Met Ala Ile Ser Trp Leu Gly Thr Trp Leu Leu Gln Ser His Arg His
1 5 10 15
Trp Ser Glu Pro Gln Leu Cys Arg Leu Pro Ala Arg His His Leu Ile
20 25 30
Asn Leu Asn Phe Met Val Ala Glu Gly Ile Gly Asp Arg Ala Trp His
35 40 45
Ile Ile Ser Ala Gln Leu Phe Met Thr Phe Ser Phe His Ala Val Ile
50 55 60
Leu Gln Thr Asp Leu Gly Glu Ala Gly Lys Tyr Lys Asp Lys *
65 70 75 78

<210> 1448
<211> 276
<212> PRT
<213> Homo sapiens

<400> 1448
Met Val Trp Val Val Leu Leu Ser Leu Leu Cys Tyr Leu Val Leu Phe
1 5 10 15
Leu Cys Arg His Ser Ser His Arg Gly Val Phe Leu Ser Val Thr Ile
20 25 30
Leu Ile Tyr Leu Leu Met Gly Glu Met His Met Val Asp Thr Val Thr
35 40 45
Trp His Lys Met Arg Gly Ala Gln Met Ile Val Ala Met Lys Ala Val
50 55 60
Ser Leu Gly Phe Asp Leu Asp Arg Gly Glu Val Gly Thr Val Pro Ser
65 70 75 80
Pro Val Glu Phe Met Gly Tyr Leu Tyr Phe Val Gly Thr Ile Val Phe
85 90 95
Gly Pro Trp Ile Ser Phe His Ser Tyr Leu Gln Ala Val Gln Gly Arg
100 105 110
Pro Leu Ser Cys Arg Trp Leu Gln Lys Val Ala Arg Ser Leu Ala Leu
115 120 125
Ala Leu Leu Cys Leu Val Leu Ser Thr Cys Val Gly Pro Tyr Leu Phe

130 135 140
Pro Tyr Phe Ile Pro Leu Asn Gly Asp Arg Leu Leu Arg Lys Trp Leu
145 150 155 160
Arg Ala Tyr Glu Ser Ala Val Ser Phe His Phe Ser Asn Tyr Phe Val
165 170 175
Gly Phe Leu Ser Glu Ala Thr Ala Thr Leu Ala Gly Ala Gly Phe Thr
180 185 190
Glu Glu Lys Asp His Leu Glu Trp Asp Leu Thr Val Ser Lys Pro Leu
195 200 205
Asn Val Glu Leu Pro Arg Ser Met Val Glu Val Val Thr Ser Trp Asn
210 215 220
Leu Pro Met Ser Tyr Trp Leu Asn Asn Tyr Gly Phe Lys Asn Ala Leu
225 230 235 240
Arg Leu Gly Thr Leu Leu Gly Cys Ala Gly His Leu Cys Ser Gln Arg
245 250 255
Pro Ser Lys Leu Leu Lys Phe Pro Pro Gly Trp Gly Pro Cys Cys Pro
260 265 270
Gly Phe Leu *
275

<210> 1449
<211> 597
<212> PRT
<213> Homo sapiens

<400> 1449
Met Glu Phe Gly Leu Ser Trp Val Phe Leu Val Ala Ile Leu Lys Gly
1 5 10 15
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
20 25 30
Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45
Ser Ser Tyr Trp Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60
Val Trp Val Ser Arg Ile Asn Thr Asp Gly Ser Ser Thr Ser Tyr Ala
65 70 75 80
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn
85 90 95
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110
Tyr Tyr Cys Ala Arg Ala Asp Asn Cys Ser Ser Thr Ser Cys Tyr Lys
115 120 125
Cys Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
130 135 140
Ser Ala Ser Ala Pro Thr Leu Phe Pro Leu Val Ser Cys Glu Asn Ser
145 150 155 160
Pro Ser Asp Thr Ser Ser Val Ala Val Gly Cys Leu Ala Gln Asp Phe
165 170 175
Leu Pro Asp Ser Ile Thr Phe Ser Trp Lys Tyr Lys Asn Asn Ser Asp
180 185 190
Ile Ser Ser Thr Arg Gly Phe Pro Ser Val Leu Arg Gly Gly Lys Tyr
195 200 205
Ala Ala Thr Ser Gln Val Leu Leu Pro Ser Lys Asp Val Met Gln Gly
210 215 220
Thr Asp Glu His Val Val Cys Lys Val Gln His Pro Asn Gly Asn Lys
225 230 235 240

Glu Lys Asn Val Pro Leu Pro Val Ile Ala Glu Leu Pro Pro Lys Val
                245   250   255
Ser Val Phe Val Pro Pro Arg Asp Gly Phe Phe Gly Asn Pro Arg Lys
            260   265   270
Ser Lys Leu Ile Cys Gln Ala Thr Gly Phe Ser Pro Arg Gln Ile Gln
        275   280   285
Val Ser Trp Leu Arg Glu Gly Lys Gln Val Gly Ser Gly Val Thr Thr
    290   295   300
Asp Gln Val Gln Ala Glu Ala Lys Glu Ser Gly Pro Thr Thr Tyr Lys
305   310   315   320
Val Thr Ser Thr Leu Thr Ile Lys Glu Ser Asp Trp Leu Ser Gln Ser
                325   330   335
Met Phe Thr Cys Arg Val Asp His Arg Gly Leu Thr Phe Gln Gln Asn
            340   345   350
Ala Ser Ser Met Cys Val Pro Asp Gln Asp Thr Ala Ile Arg Val Phe
        355   360   365
Ala Ile Pro Pro Ser Phe Ala Ser Ile Phe Leu Thr Lys Ser Thr Lys
    370   375   380
Leu Thr Cys Leu Val Thr Asp Leu Thr Thr Tyr Asp Ser Val Thr Ile
385   390   395   400
Ser Trp Thr Arg Gln Asn Gly Glu Ala Val Lys Thr His Thr Asn Ile
                405   410   415
Ser Glu Ser His Pro Asn Ala Thr Phe Ser Ala Val Gly Glu Ala Ser
            420   425   430
Ile Cys Glu Asp Asp Trp Asn Ser Gly Glu Arg Phe Thr Cys Thr Val
        435   440   445
Thr His Thr Asp Leu Pro Ser Pro Leu Lys Gln Thr Ile Ser Arg Pro
    450   455   460
Lys Gly Val Ala Leu His Arg Pro Asp Val Tyr Leu Leu Pro Pro Ala
465   470   475   480
Arg Glu Gln Leu Asn Leu Arg Glu Ser Ala Thr Ile Thr Cys Leu Val
                485   490   495
Thr Gly Phe Ser Pro Ala Asp Val Phe Val Gln Trp Met Gln Arg Gly
            500   505   510
Gln Pro Leu Ser Pro Glu Lys Tyr Val Thr Ser Ala Pro Met Pro Glu
        515   520   525
Pro Gln Ala Pro Gly Arg Tyr Phe Ala His Ser Ile Leu Thr Val Ser
    530   535   540
Glu Glu Glu Trp Asn Thr Gly Glu Thr Tyr Thr Cys Val Val Ala His
545   550   555   560
Glu Ala Leu Pro Asn Arg Val Thr Glu Arg Thr Val Asp Lys Ser Thr
                565   570   575
Gly Lys Pro Thr Leu Tyr Asn Val Ser Leu Val Met Ser Asp Thr Ala
            580   585   590
Gly Thr Cys Tyr *
        595 596

<210> 1450
<211> 276
<212> PRT
<213> Homo sapiens

<400> 1450
Met Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala Leu Trp
 1   5   10   15
Leu Cys Cys Ala Thr Pro Ala His Ala Leu Gln Cys Arg Asp Gly Tyr

```
                20                  25                  30
Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn Gly Thr
            35                  40                  45
Gly Tyr Cys Lys Cys Pro Glu Gly Phe Leu Gly Glu Tyr Cys Gln His
        50                  55                  60
Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr Cys Val
 65                  70                  75                  80
Ala Gln Ala Met Leu Gly Lys Ala Thr Cys Arg Cys Ala Ser Gly Phe
                    85                  90                  95
Thr Gly Glu Asp Cys Gln Tyr Ser Thr Ser His Pro Cys Phe Val Ser
                100                 105                 110
Arg Pro Cys Leu Asn Gly Gly Thr Cys His Met Leu Ser Arg Asp Thr
            115                 120                 125
Tyr Glu Cys Thr Cys Gln Val Gly Phe Thr Gly Lys Glu Cys Gln Trp
        130                 135                 140
Thr Asp Ala Cys Leu Ser His Pro Cys Ala Asn Gly Ser Thr Cys Thr
145                 150                 155                 160
Thr Val Ala Asn Gln Phe Ser Cys Lys Cys Leu Thr Gly Phe Thr Gly
                    165                 170                 175
Gln Lys Cys Glu Thr Asp Val Asn Glu Cys Asp Ile Pro Gly His Cys
                180                 185                 190
Gln His Gly Gly Ile Cys Leu Asn Leu Pro Gly Ser Tyr Gln Cys Gln
            195                 200                 205
Cys Leu Gln Gly Phe Thr Gly Gln Tyr Cys Asp Ser Leu Tyr Val Pro
        210                 215                 220
Cys Ala Pro Ser Pro Cys Val Asn Gly Gly Thr Cys Arg Gln Thr Gly
225                 230                 235                 240
Asp Phe Thr Phe Glu Cys Asn Cys Leu Pro Glu Thr Val Arg Arg Gly
                    245                 250                 255
Thr Glu Leu Trp Glu Arg Asp Arg Glu Val Trp Asn Gly Lys Glu His
                260                 265                 270
Asp Glu Asn  *
            275
```

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<210> 1451
<211> 121
<212> PRT
<213> Homo sapiens


<400> 1451
Met Glu Ser Gly Leu Ser Trp Ile Phe Leu Leu Ala Ile Leu Lys Gly
  1               5                  10                  15
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
                20                  25                  30
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Arg Phe
            35                  40                  45
Asp Glu Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
        50                  55                  60
Glu Trp Val Gly Gly Ile Ser Trp Asn Arg Asp Ser Ile Ala Tyr Ala
 65                  70                  75                  80
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Gln Ser
                    85                  90                  95
Tyr Val Tyr Leu Gln Met Asn Ser Leu Arg His Glu Asp Thr Ala Leu
                100                 105                 110
Tyr Tyr Cys Thr Lys Leu Arg Ser Ser
            115                 120 121
```

<210> 1452
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1452
Met Glu Arg Gly Asn Ala Leu Val Val Leu Arg Ser Leu Leu Trp Pro
1 5 10 15
Gly Leu Thr Phe Tyr His Ala Pro Arg Thr Lys Asn Tyr Gly Tyr Val
20 25 30
Tyr Val Gly Thr Gly Glu Lys Asn Met Asp Leu Pro Phe Met Leu *
35 40 45 47

<210> 1453
<211> 123
<212> PRT
<213> Homo sapiens

<400> 1453
Met Ile Thr Val Gln Phe Ser Tyr Thr Ala Val Lys Trp Leu Leu Asn
1 5 10 15
Cys Phe Val Leu Ile Leu Tyr Val Ile Leu Ser Ile Leu Phe Gln Val
20 25 30
Ser Gln Lys Asn Ser Ser Lys Leu Gly Arg Phe Lys Asn Leu Phe Asn
35 40 45
His Lys Glu Cys Ser Lys Leu Leu Phe Asn Arg Asn Gln Ala Gln Thr
50 55 60
Leu Glu Leu Thr Ala Asp Arg Ile Arg Phe Gly Leu Phe Pro Glu Trp
65 70 75 80
Lys His Phe Ser His Thr Thr Ser Leu Cys Thr Ala Lys Met Leu Ala
85 90 95
Tyr Pro Leu Trp Phe Pro Ser Phe Ser Leu Ala Ser Gln Arg Asn Leu
100 105 110
Pro Pro His Pro Leu Tyr Tyr Ile Phe Tyr *
115 120 122

<210> 1454
<211> 327
<212> PRT
<213> Homo sapiens

<400> 1454
Met Arg Glu Trp Trp Val Gln Val Gly Leu Leu Ala Val Pro Leu Leu
1 5 10 15
Ala Ala Tyr Leu His Ile Pro Pro Pro Gln Leu Ser Pro Ala Leu His
20 25 30
Ser Trp Lys Ser Ser Gly Lys Phe Phe Thr Tyr Lys Gly Leu Arg Ile
35 40 45
Phe Tyr Gln Asp Ser Val Gly Val Val Gly Ser Pro Glu Ile Val Val

```
     50                  55                  60
Leu Leu His Gly Phe Pro Thr Ser Ser Tyr Asp Trp Tyr Lys Ile Trp
 65                 70                  75                  80
Glu Gly Leu Thr Leu Arg Phe His Arg Val Ile Ala Leu Asp Phe Leu
                85                  90                  95
Gly Phe Gly Phe Ser Asp Lys Pro Arg Pro His His Tyr Ser Ile Phe
            100                 105                 110
Glu Gln Ala Ser Ile Val Glu Ala Leu Leu Arg His Leu Gly Leu Gln
        115                 120                 125
Asn Arg Arg Ile Asn Leu Leu Ser His Asp Tyr Gly Asp Ile Val Ala
    130                 135                 140
Gln Glu Leu Leu Tyr Arg Tyr Lys Gln Asn Arg Ser Gly Arg Leu Thr
145                 150                 155                 160
Ile Lys Ser Leu Cys Leu Ser Asn Gly Gly Ile Phe Pro Glu Thr His
                165                 170                 175
Arg Pro Leu Leu Leu Gln Lys Leu Leu Lys Asp Gly Gly Val Leu Ser
            180                 185                 190
Pro Ile Leu Thr Arg Leu Met Asn Phe Phe Val Phe Ser Arg Gly Leu
        195                 200                 205
Thr Pro Val Phe Gly Pro Tyr Thr Arg Pro Ser Glu Ser Glu Leu Trp
    210                 215                 220
Asp Met Trp Ala Gly Ile Arg Asn Asn Asp Gly Asn Leu Val Ile Asp
225                 230                 235                 240
Ser Leu Leu Gln Tyr Ile Asn Gln Arg Lys Lys Phe Arg Arg Arg Trp
                245                 250                 255
Val Gly Ala Leu Ala Ser Val Thr Ile Pro Ile His Phe Ile Tyr Gly
            260                 265                 270
Pro Leu Asp Pro Val Asn Pro Tyr Pro Glu Phe Leu Glu Leu Tyr Arg
        275                 280                 285
Lys Thr Leu Pro Arg Ser Thr Val Ser Ile Leu Asp Asp His Ile Ser
    290                 295                 300
His Tyr Pro Gln Leu Glu Asp Pro Met Gly Phe Leu Asn Ala Tyr Met
305                 310                 315                 320
Gly Phe Ile Asn Ser Phe  *
                325 326


     <210> 1455
     <211> 57
     <212> PRT
     <213> Homo sapiens


     <400> 1455
Met Ile Leu Leu Lys Val Cys Ser Ala Ala Ser Leu Leu Gly Glu Gly
 1               5                  10                  15
Phe Met Asn Gln Val Thr Ser Thr Asn Lys Ala Ser Leu Ser Leu Leu
            20                  25                  30
Ser Leu Thr Met Lys Val Ala Val Asn Lys Gly Lys Lys Glu Arg Glu
        35                  40                  45
Leu Phe Ile Pro Phe Gln Phe Gln  *
     50                  55  56


     <210> 1456
     <211> 48
     <212> PRT
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<213> Homo sapiens

<400> 1456
Met His Cys Ile Phe Ser Cys Leu Leu Trp Cys Ile Gln Leu Pro Ser
1 5 10 15
Met Leu Ser Val Leu Lys Thr Gln Pro Ser Lys Asn His Pro Leu Trp
20 25 30
Pro Cys Lys Tyr Ala Tyr Asn Ile Phe Phe Phe Leu Cys Ile Ile *
35 40 45 47

<210> 1457
<211> 459
<212> PRT
<213> Homo sapiens

<400> 1457
Met Ser Asp Leu Leu Ser Val Phe Leu His Leu Leu Leu Leu Phe Lys
1 5 10 15
Leu Val Ala Pro Val Thr Phe Arg His His Arg Tyr Asp Asp Leu Val
20 25 30
Arg Thr Leu Tyr Lys Val Gln Asn Glu Cys Pro Gly Ile Thr Arg Val
35 40 45
Tyr Ser Ile Gly Arg Ser Val Glu Gly Arg His Leu Tyr Val Leu Glu
50 55 60
Phe Ser Asp His Pro Gly Ile His Glu Pro Leu Glu Pro Glu Val Lys
65 70 75 80
Tyr Val Gly Asn Met His Gly Asn Glu Ala Leu Gly Arg Glu Leu Met
85 90 95
Leu Gln Leu Ser Glu Phe Leu Cys Glu Glu Phe Arg Asn Arg Asn Gln
100 105 110
Arg Ile Val Gln Leu Ile Gln Asp Thr Arg Ile His Ile Leu Pro Ser
115 120 125
Met Asn Pro Asp Gly Tyr Glu Val Ala Ala Ala Gln Gly Pro Asn Lys
130 135 140
Pro Gly Tyr Leu Val Gly Arg Asn Asn Ala Asn Gly Val Asp Leu Asn
145 150 155 160
Arg Asn Phe Pro Asp Leu Asn Thr Tyr Ile Tyr Tyr Asn Glu Lys Tyr
165 170 175
Gly Gly Pro Asn His His Leu Pro Leu Pro Asp Asn Trp Lys Ser Gln
180 185 190
Val Glu Pro Glu Thr Arg Ala Val Ile Arg Trp Met His Ser Phe Asn
195 200 205
Phe Val Leu Ser Ala Asn Leu His Gly Gly Ala Val Val Ala Asn Tyr
210 215 220
Pro Tyr Asp Lys Ser Phe Glu His Arg Val Arg Gly Val Arg Arg Thr
225 230 235 240
Ala Ser Thr Pro Thr Pro Asp Asp Lys Leu Phe Gln Lys Leu Ala Lys
245 250 255
Val Tyr Ser Tyr Ala His Gly Trp Met Phe Gln Gly Trp Asn Cys Gly
260 265 270
Asp Tyr Phe Pro Asp Gly Ile Thr Asn Gly Ala Ser Trp Tyr Ser Leu
275 280 285
Ser Lys Gly Met Gln Asp Phe Asn Tyr Leu His Thr Asn Cys Phe Glu
290 295 300
Ile Thr Leu Glu Leu Ser Cys Asp Lys Phe Pro Pro Glu Glu Glu Leu

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305                 310                 315                 320
Gln Arg Glu Trp Leu Gly Asn Arg Glu Ala Leu Ile Gln Phe Leu Glu
                325                 330                 335
Gln Val His Gln Gly Ile Lys Gly Met Val Leu Asp Glu Asn Tyr Asn
            340                 345                 350
Asn Leu Ala Asn Ala Val Ile Ser Val Ser Gly Ile Asn His Asp Val
        355                 360                 365
Thr Ser Gly Asp His Gly Asp Tyr Phe Arg Leu Leu Leu Pro Gly Ile
    370                 375                 380
Tyr Thr Val Ser Ala Thr Ala Pro Gly Tyr Asp Pro Glu Thr Val Thr
385                 390                 395                 400
Val Thr Val Gly Pro Ala Glu Pro Thr Leu Val Asn Phe His Leu Lys
                405                 410                 415
Arg Ser Ile Pro Gln Val Ser Pro Val Arg Arg Ala Pro Ser Arg Arg
            420                 425                 430
His Gly Val Arg Ala Lys Val Gln Pro Gln Pro Arg Lys Lys Glu Met
        435                 440                 445
Glu Met Arg Gln Leu Gln Arg Gly Pro Ala  *
    450                 455         458


     <210> 1458
     <211> 463
     <212> PRT
     <213> Homo sapiens


     <400> 1458
Met Ala Arg Val Leu Gly Ala Pro Val Ala Leu Gly Leu Trp Ser Leu
  1               5                  10                  15
Cys Trp Ser Leu Ala Ile Ala Thr Pro Leu Pro Pro Thr Ser Ala His
            20                  25                  30
Gly Asn Val Ala Glu Gly Glu Thr Lys Pro Asp Pro Asp Val Thr Glu
        35                  40                  45
Arg Cys Ser Asp Gly Trp Ser Phe Asp Ala Thr Thr Leu Asp Asp Asn
    50                  55                  60
Gly Thr Met Leu Phe Phe Lys Gly Glu Phe Val Trp Lys Ser His Lys
65                  70                  75                  80
Trp Asp Arg Glu Leu Ile Ser Glu Arg Trp Lys Asn Phe Pro Ser Pro
                85                  90                  95
Val Asp Ala Ala Phe Arg Gln Gly His Asn Ser Val Phe Leu Ile Lys
            100                 105                 110
Gly Asp Lys Val Trp Val Tyr Pro Pro Glu Lys Lys Glu Lys Gly Tyr
        115                 120                 125
Pro Lys Leu Leu Gln Asp Glu Phe Pro Gly Ile Pro Ser Pro Leu Asp
    130                 135                 140
Ala Ala Val Glu Cys His Arg Gly Glu Cys Gln Ala Glu Gly Val Leu
145                 150                 155                 160
Phe Phe Gln Gly Asp Arg Glu Trp Phe Trp Asp Leu Ala Thr Gly Thr
                165                 170                 175
Met Lys Glu Arg Ser Trp Pro Ala Val Gly Asn Cys Ser Ser Ala Leu
            180                 185                 190
Arg Trp Leu Gly Arg Tyr Tyr Cys Phe Gln Gly Asn Gln Phe Leu Arg
        195                 200                 205
Phe Asp Pro Val Arg Gly Glu Val Pro Pro Arg Tyr Pro Arg Asp Val
    210                 215                 220
Arg Asp Tyr Phe Met Pro Cys Pro Gly Arg Gly His Gly His Arg Asn
225                 230                 235                 240
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Gly Thr Gly His Gly Asn Ser Thr His His Gly Pro Glu Tyr Met Arg
245 250 255
Cys Ser Pro His Leu Val Leu Ser Ala Leu Thr Ser Asp Asn His Gly
260 265 270
Ala Thr Tyr Ala Phe Ser Gly Thr His Tyr Trp Arg Leu Asp Thr Ser
275 280 285
Arg Asp Gly Trp His Ser Trp Pro Ile Ala His Gln Trp Pro Gln Gly
290 295 300
Pro Ser Ala Val Asp Ala Ala Phe Ser Trp Glu Glu Lys Leu Tyr Leu
305 310 315 320
Val Gln Gly Thr Gln Val Tyr Val Phe Leu Thr Lys Gly Gly Tyr Thr
325 330 335
Leu Val Ser Gly Tyr Pro Lys Arg Leu Glu Lys Glu Val Gly Thr Pro
340 345 350
His Gly Ile Ile Leu Asp Ser Val Asp Ala Ala Phe Ile Cys Pro Gly
355 360 365
Ser Ser Arg Leu His Ile Met Ala Gly Arg Arg Leu Trp Trp Leu Asp
370 375 380
Leu Lys Ser Gly Ala Gln Ala Thr Trp Thr Glu Leu Pro Trp Pro His
385 390 395 400
Glu Lys Val Asp Gly Ala Leu Cys Met Glu Lys Ser Leu Gly Pro Asn
405 410 415
Ser Cys Ser Ala Asn Gly Pro Gly Leu Tyr Leu Ile His Gly Pro Asn
420 425 430
Leu Tyr Cys Tyr Ser Asp Val Glu Lys Leu Asn Ala Ala Lys Ala Leu
435 440 445
Pro Gln Pro Gln Asn Val Thr Ser Leu Leu Gly Cys Thr His *
450 455 460 462

<210> 1459
<211> 187
<212> PRT
<213> Homo sapiens

<400> 1459
Met Gln Pro Ile Val Ala Lys Ala Leu Val Val Leu Leu Glu Val His
1 5 10 15
Pro Leu Gln Asp Gln Ala Glu Ser Gly Arg Leu Gly His Val His Leu
20 25 30
Leu Cys Ala Pro Ala Ala Leu Gln His Ala Leu Arg Gly Ile Thr Leu
35 40 45
His Asn Gly His His Gln Ala Asp His Leu Pro Asp Leu Met His His
50 55 60
Glu Ala Leu Ala Leu His Pro Asp His Arg Lys Leu Gln Ala Leu Pro
65 70 75 80
His Lys Gly Phe Leu Ala Val His Leu Gln Asp Val Ala Ala Gly Thr
85 90 95
Gly Ile Leu Arg Pro Leu Leu Arg Gly Glu Ile Val Glu Val Val Arg
100 105 110
Ala Leu Val Ala Gly Gln Glu Pro Val Asp Leu Leu Gln Arg Leu Gly
115 120 125
Ala Gln Ala Val Gly Leu Ile Leu Asn Val Pro Val Leu Val Arg Lys
130 135 140
Gly Lys Arg Gly Gln Gln Val Ala Ile Gly Pro Gly Ile Thr Ser Val
145 150 155 160
Leu Gly Val Lys Pro Ala Arg Asp Pro Leu Gln Ser Gln Asn Pro Asn

```
                165                     170                     175
Val Arg Gly Lys Val Ala Val Asp Leu Phe  *
            180                 185 186



     <210> 1460
     <211> 223
     <212> PRT
     <213> Homo sapiens


     <400> 1460
Met Lys Phe Ala Leu Phe Thr Ser Gly Val Ala Leu Thr Leu Ser Phe
 1               5                  10                  15
Val Phe Met Tyr Ala Lys Cys Glu Asn Glu Pro Phe Ala Gly Val Ser
            20                  25                  30
Glu Ser Tyr Asn Gly Thr Gly Glu Leu Gly Asn Leu Ile Ala Pro Cys
        35                  40                  45
Asn Ala Asn Cys Asn Cys Ser Arg Ser Tyr Tyr Tyr Pro Val Cys Gly
    50                  55                  60
Asp Gly Val Gln Tyr Phe Ser Pro Cys Phe Ala Gly Cys Ser Asn Pro
65                  70                  75                  80
Val Ala His Arg Lys Pro Lys Val Tyr Tyr Asn Cys Ser Cys Ile Glu
                85                  90                  95
Arg Lys Thr Glu Ile Thr Ser Thr Ala Glu Thr Phe Gly Phe Glu Ala
            100                 105                 110
Asn Ala Gly Lys Cys Glu Thr His Cys Ala Lys Leu Ala Ile Phe Leu
        115                 120                 125
Cys Ile Val Phe Ile Gly Asn Ile Phe Thr Phe Met Ala Arg Ser Pro
    130                 135                 140
Ile Thr Gly Ala Ile Pro Arg Gly Gly Asn His Arg Gln Arg Pro Pro
145                 150                 155                 160
Thr Leu Gly Ile Gln Phe Met Ala Leu Arg Thr Leu Trp Thr Thr Pro
                165                 170                 175
Trp Pro Ser Lys Thr Gly Cys Pro Ile His Gln Pro Gly Ser Leu Trp
            180                 185                 190
Glu Lys Leu Gly Trp Arg Pro Leu Lys Thr Leu Arg Arg Pro Lys Pro
        195                 200                 205
Ser Trp Asn Ala Leu Leu Ala Leu Ala His Pro Arg Ser Phe Gln
    210                 215                 220         223



     <210> 1461
     <211> 210
     <212> PRT
     <213> Homo sapiens


     <400> 1461
Met Tyr Phe Phe Leu Leu Leu Leu Phe Phe Asn Val Gln Arg Leu Ala
 1               5                  10                  15
Phe Pro Phe Gly Ile Pro Asn Asp Pro Met Leu Trp Ser Glu Gly Gln
            20                  25                  30
Ser His Leu Cys Trp Arg Ser Pro Leu Ile Pro Ser Ala Gln Phe Arg
        35                  40                  45
Gly Ser Arg Ala Asp Ile Arg Gly Ser Met Leu His Ser Ser Ser Gly
    50                  55                  60
```

Arg Val Val Pro Leu Asn Pro Ala Thr Lys Leu Ser Pro Leu Glu Ser
65 70 75 80
Gln Met Ala Leu His Thr Lys Ala Val Glu Ala Gly Met Val Phe Gly
85 90 95
His Arg Ala Glu His Lys Asp Pro Arg Ser Val Trp Glu Ser Tyr Trp
100 105 110
Leu Leu Gly Ser Pro Trp Ala Glu Val Thr Arg Leu His Pro Arg Arg
115 120 125
Ala Gln Leu Gly Ser Leu Pro Pro Pro Asp Pro Arg Thr Thr His Arg
130 135 140
Arg Gly Ala Val Ser Ile Phe Leu Lys Gly Pro Phe Gly Asp Leu Val
145 150 155 160
Leu Ser Val Glu Arg Thr Asp Val Ala Leu Ser Ser Gln His Ile Pro
165 170 175
Gly Ser Gly Arg Pro Gln Leu Lys Gln Cys Gln Gly Pro Gln Gly Ser
180 185 190
His Leu Asp Arg Pro Thr Ala Cys Asn Ser Ala Leu Leu Arg Arg Gln
195 200 205
His *
209

<210> 1462
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1462
Met Ala Val Arg Val Leu Trp Gly Gly Leu Ser Leu Leu Arg Val Leu
1 5 10 15
Trp Cys Leu Leu Pro Gln Thr Gly Tyr Val His Pro Asp Glu Phe Phe
20 25 30
Gln Ser Pro Glu Val Met Ala Gly Lys Thr Pro His Val Trp Leu Arg
35 40 45
Gln Ala Ala Ala Glu Ser Ala *
50 55

<210> 1463
<211> 66
<212> PRT
<213> Homo sapiens

<400> 1463
Met Glu Asn Cys Val Gly Glu Arg Asn His Pro Leu Phe Val Val Tyr
1 5 10 15
Leu Ala Leu Gln Leu Val Val Leu Leu Trp Gly Leu Tyr Leu Ala Cys
20 25 30
Pro Gly Val Cys Gly Cys Gly Pro Ala Gly Ser Cys Ser Pro Pro Ser
35 40 45
Cys Cys Trp Pro Ser Ser Arg Gly Gly Gln Pro Gly Ser Arg Leu Ala
50 55 60
Pro Leu
65 66

<210> 1464
<211> 200
<212> PRT
<213> Homo sapiens

<400> 1464
Met Val Trp Arg Arg Leu Leu Arg Lys Arg Trp Val Leu Ala Leu Val
1 5 10 15
Phe Gly Leu Ser Leu Val Tyr Phe Leu Ser Ser Thr Phe Lys Gln Glu
20 25 30
Glu Arg Ala Val Arg Asp Arg Asn Leu Leu Gln Val His Asp His Asn
35 40 45
Gln Pro Ile Pro Trp Lys Val Gln Phe Asn Leu Gly Asn Ser Ser Arg
50 55 60
Pro Ser Asn Gln Cys Arg Asn Ser Ile Gln Gly Lys His Leu Ile Thr
65 70 75 80
Asp Glu Leu Gly Tyr Val Cys Glu Arg Lys Asp Leu Leu Val Asn Gly
85 90 95
Cys Cys Asn Val Asn Val Pro Ser Thr Lys Gln Tyr Cys Cys Asp Gly
100 105 110
Cys Trp Pro Asn Gly Cys Cys Ser Ala Tyr Glu Tyr Cys Val Ser Cys
115 120 125
Cys Leu Gln Pro Asn Lys Gln Leu Leu Leu Glu Arg Phe Leu Asn Arg
130 135 140
Ala Ala Val Ala Phe Gln Asn Leu Phe Met Ala Val Glu Asp His Phe
145 150 155 160
Glu Leu Cys Leu Ala Lys Cys Arg Thr Ser Ser Gln Ser Val Gln His
165 170 175
Glu Asn Thr Tyr Arg Asp Pro Ile Ala Lys Tyr Cys Tyr Gly Glu Ser
180 185 190
Pro Pro Glu Leu Phe Pro Ala *
195 199

<210> 1465
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1465
Met Gln Leu Ile Arg Arg Ser His Asn Arg His Trp Phe Arg Ser Ala
1 5 10 15
Ile Thr Phe Leu Met Cys Lys Gly Ile Thr Leu Leu Trp Leu Trp Lys
20 25 30
Leu Leu Thr Gly Asn Asp Cys Ile Glu Tyr Ile Arg Lys *
35 40 45

<210> 1466
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1466
Met Arg Leu Leu Phe Ser Ser Gln Val Asn Ser Lys Arg Leu Thr Ala
1 5 10 15
Ser Arg Ala Phe Leu Val Leu Val Pro Ala His Leu Ser Tyr Leu Leu
20 25 30
Ala Leu Pro Ser Ile Pro Ala Thr Arg Gly Phe Trp Phe Lys Asp Thr
35 40 45
Val Phe Leu Ser Cys Ser Ala *
50 55

<210> 1467
<211> 366
<212> PRT
<213> Homo sapiens

<400> 1467
Met Arg Gly Gln Val Val Thr Leu Ile Leu Leu Leu Leu Leu Lys Val
1 5 10 15
Tyr Gln Gly Lys Gly Cys Gln Gly Ser Ala Asp His Val Val Ser Ile
20 25 30
Ser Gly Val Pro Leu Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val
35 40 45
Asp Ser Ile Ala Trp Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His
50 55 60
His Ile Leu Lys Trp Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn
65 70 75 80
Asp Arg Phe Ser Phe Ile Val Lys Asn Leu Ser Leu Leu Ile Lys Ala
85 90 95
Ala Gln Gln Gln Asp Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile
100 105 110
Ser Gly Lys Val Gln Thr Ala Thr Phe Gln Val Phe Val Phe Asp Lys
115 120 125
Val Glu Lys Pro Arg Leu Gln Gly Gln Gly Lys Ile Leu Asp Arg Gly
130 135 140
Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
145 150 155 160
Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
165 170 175
Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
180 185 190
Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn
195 200 205
Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Phe Trp Pro
210 215 220
Phe Leu Val Ile Ile Val Ile Leu Ser Ala Leu Phe Leu Gly Thr Leu
225 230 235 240
Ala Cys Phe Cys Val Trp Arg Arg Lys Arg Lys Glu Lys Gln Ser Glu
245 250 255
Thr Ser Pro Lys Glu Phe Leu Thr Ile Tyr Glu Asp Val Lys Asp Leu
260 265 270
Lys Thr Arg Arg Asn His Glu Gln Glu Gln Thr Phe Pro Gly Gly Gly
275 280 285
Ser Thr Ile Tyr Ser Met Ile Gln Ser Gln Ser Ser Ala Pro Thr Ser
290 295 300
Gln Glu Pro Ala Tyr Thr Leu Tyr Ser Leu Ile Gln Pro Ser Arg Lys

```
305                 310                 315                 320
Ser Gly Ser Arg Lys Arg Asn His Ser Pro Ser Phe Asn Ser Thr Ile
                325                 330                 335
Tyr Glu Val Ile Gly Lys Ser Gln Pro Lys Ala Gln Asn Pro Ala Arg
            340                 345                 350
Leu Ser Arg Lys Glu Leu Glu Asn Phe Asp Val Tyr Ser  *
        355                 360                 365
```

<210> 1468
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1468

```
Met Thr Asp Phe Phe Leu Cys Ile His Ser Phe Tyr Leu Cys Val Leu
 1               5                  10                  15
Leu Gln Ala Ser Leu Asp Met Leu Ser Val Lys Ser Phe Ser Phe Lys
            20                  25                  30
Val Leu Cys Leu Met Lys Ala Lys Glu Lys Pro Asn Thr Thr Ser Cys
        35                  40                  45
His Leu Val Ile Asp Ser Asn Ser Thr
    50                  55      57
```

<210> 1469
<211> 110
<212> PRT
<213> Homo sapiens

<400> 1469

```
Met Leu Glu Ile Leu Leu Lys Leu Val Arg Leu Leu Thr Thr Gln Pro
 1               5                  10                  15
Tyr Leu Thr Leu Phe Gln Ala Val Arg Asn Leu Ala Leu Asn Leu Ser
            20                  25                  30
Thr Ser Ser Gly Ser Leu Gly Pro Ala Pro Gly Glu Pro Arg Ala Gly
        35                  40                  45
Pro Leu Ala Pro Glu Gly Pro Arg Pro Leu Gly Ser Gly Pro Leu Gly
    50                  55                  60
Pro Arg Gly Leu Arg Ala Ser Gly Arg Arg Arg Ala Ser Ser Gly Leu
65                  70                  75                  80
Leu Leu Arg Tyr Cys Ala Ala Ala Gly Asp Thr Glu Phe Met Asp Ala
                85                  90                  95
Pro Gly Gly Arg Thr Glu Gly Pro Gly Gly Gly Leu Arg Pro
            100                 105                 110
```

<210> 1470
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1470

Met Met Cys Arg Cys Met Cys Ala Cys Val Cys Ala Pro Val Cys Val
1 5 10 15
His Met His Gly Leu Ala Pro Ala Pro Ala Ile Trp Ile Glu Gln Phe
20 25 30
Trp Val Glu Asn Phe Phe Ser Pro Phe Leu Lys Val Ser Phe Tyr Ser
35 40 45
Leu Pro Val Cys Ile Glu Lys Ser Ser Ile *
50 55 58

<210> 1471
<211> 123
<212> PRT
<213> Homo sapiens

<400> 1471
Met Met His Phe Leu Thr Gly Gly Trp Lys Val Leu Phe Ala Cys Val
1 5 10 15
Pro Pro Thr Glu Tyr Cys His Gly Trp Ala Cys Phe Gly Val Ser Ile
20 25 30
Leu Val Ile Gly Leu Leu Thr Ala Leu Ile Gly Asp Leu Ala Ser His
35 40 45
Phe Gly Cys Thr Val Gly Leu Lys Asp Ser Val Asn Ala Val Val Phe
50 55 60
Val Ala Leu Gly Thr Ser Ile Pro Gly Asn Thr Leu Gly Asp Phe Gly
65 70 75 80
Gly Val Gly Ser Gln Met Ser Gln Ala Gly Ala Thr Gln Asp Pro Ala
85 90 95
Glu Met Arg His Val Arg Gln Gln Gly Gly Gly Ala Ala Gly Pro Val
100 105 110
Arg Arg Arg Val His Arg Glu Arg Asp Pro Leu
115 120 123

<210> 1472
<211> 316
<212> PRT
<213> Homo sapiens

<400> 1472
Met Val Ser Ala Ser Gly Thr Ser Phe Phe Lys Gly Met Leu Leu Gly
1 5 10 15
Ser Ile Ser Trp Val Leu Ile Thr Met Phe Gly Gln Ile His Ile Arg
20 25 30
His Arg Gly Gln Thr Gln Asp His Glu His His His Leu Arg Pro Pro
35 40 45
Asn Arg Asn Asp Phe Leu Asn Thr Ser Lys Val Ile Leu Leu Glu Leu
50 55 60
Ser Lys Ser Ile Arg Val Phe Cys Ile Ile Phe Gly Glu Ser Glu Asp
65 70 75 80
Glu Ser Tyr Trp Ala Val Leu Lys Glu Thr Trp Thr Lys His Cys Asp
85 90 95
Lys Ala Glu Leu Tyr Asp Thr Lys Asn Asp Asn Leu Phe Asn Ile Glu
100 105 110
Ser Asn Asp Arg Trp Val Gln Met Arg Thr Ala Tyr Lys Tyr Val Phe

```
        115                 120                 125
Glu Lys Asn Gly Asp Asn Tyr Asn Trp Phe Phe Leu Ala Leu Pro Thr
    130                 135                 140
Thr Phe Ala Val Ile Glu Asn Leu Lys Tyr Leu Leu Phe Thr Arg Asp
145                 150                 155                 160
Ala Ser Gln Pro Phe Tyr Leu Gly His Thr Val Ile Phe Gly Asp Leu
                165                 170                 175
Glu Tyr Val Thr Val Glu Gly Gly Ile Val Leu Ser Arg Glu Leu Met
            180                 185                 190
Lys Arg Leu Asn Arg Leu Leu Asp Asn Ser Glu Thr Cys Ala Asp Gln
        195                 200                 205
Ser Val Ile Trp Lys Leu Ser Glu Asp Lys Gln Leu Ala Ile Cys Leu
    210                 215                 220
Lys Tyr Ala Gly Val His Ala Glu Asn Ala Glu Asp Tyr Glu Gly Arg
225                 230                 235                 240
Asp Val Phe Asn Thr Lys Pro Ile Ala Gln Leu Ile Glu Glu Ala Leu
                245                 250                 255
Ser Asn Asn Pro Gln Gln Val Val Glu Gly Cys Cys Ser Asp Met Ala
            260                 265                 270
Ile Thr Phe Asn Gly Leu Thr Pro Gln Lys Met Glu Val Met Met Tyr
        275                 280                 285
Gly Leu Tyr Arg Leu Arg Ala Phe Gly His Tyr Phe Asn Asp Thr Leu
    290                 295                 300
Val Phe Leu Pro Pro Val Gly Ser Glu Asn Asp  *
305                 310                 315


     <210> 1473
     <211> 65
     <212> PRT
     <213> Homo sapiens


     <400> 1473
Met Gln Cys Pro Pro Pro Phe Leu Gly Gln Trp Leu Leu Cys Pro Ala
 1               5                  10                  15
Ala Arg Gln Trp Gly Pro Gly Ala Gly Ser Pro Gly Pro Val Leu Val
            20                  25                  30
Pro Ala Gly Arg Arg Arg Pro Pro Pro Arg Ser Gly Pro Gln Arg Asp
        35                  40                  45
Ser Pro Ala Pro Val Arg Gly Pro Gln Phe His Ser Val Val Gly Pro
    50                  55                  60                  64
 *


     <210> 1474
     <211> 55
     <212> PRT
     <213> Homo sapiens


     <400> 1474
Met Ile Phe Met Arg Val Leu Met Leu Leu Cys Cys Met Asp Ser Leu
 1               5                  10                  15
Gly Ser Leu Asp Thr Phe Gln Trp Leu Ser Arg Val Leu Cys Pro Thr
            20                  25                  30
```

```
Glu Asn Leu Ile Phe Glu Leu Asn Gly Tyr Glu Leu Asn Ser Thr Trp
        35                  40                  45
Phe Gly Trp Leu Asn Thr  *
    50              54
```

<210> 1475
<211> 128
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(128)
<223> Xaa = any amino acid or nothing

<400> 1475

```
Met Lys Phe Gln Leu Phe Leu Ser Tyr Val Phe Ile Thr Gln Val Phe
 1               5                  10                  15
Ser Arg Pro Phe Gln Ser Asn Leu Gly Ser Leu Thr Pro Ala Ser Ser
            20                  25                  30
Gln Ile Pro Leu Gln Leu Pro Lys Ala Leu Cys Val Arg Cys Leu Asn
        35                  40                  45
Thr Val Xaa Xaa Xaa Xaa Xaa Thr Gly Phe Gly Lys Phe Gln Ile Thr
    50                  55                  60
Ile Gln Ser Pro Gly Gly Pro Leu Val Leu Ala Arg Pro Trp Ala Ser
65                  70                  75                  80
Lys Phe Pro Ser Pro Lys Phe Xaa Xaa Xaa Xaa Xaa Xaa Pro Lys Met
                85                  90                  95
Gly Gly Lys Thr Phe Ala Tyr Gly Arg Ile Asn Pro Thr Arg Pro Ala
            100                 105                 110
Lys Asn Xaa Xaa Xaa Xaa Xaa Xaa Ser Leu Ala Ser Leu Asn Pro Thr
        115                 120                 125         128
```

<210> 1476
<211> 210
<212> PRT
<213> Homo sapiens

<400> 1476

```
Met Tyr Phe Phe Leu Leu Leu Leu Phe Phe Asn Val Gln Arg Leu Ala
 1               5                  10                  15
Phe Pro Phe Gly Ile Pro Asn Asp Pro Met Leu Trp Ser Glu Gly Gln
            20                  25                  30
Ser His Leu Cys Trp Arg Ser Pro Leu Ile Pro Ser Ala Gln Phe Arg
        35                  40                  45
Gly Ser Arg Ala Asp Ile Arg Gly Ser Met Leu His Ser Ser Ser Gly
    50                  55                  60
Arg Val Val Pro Leu Asn Pro Ala Thr Lys Leu Ser Pro Leu Glu Ser
65                  70                  75                  80
Gln Met Ala Leu His Thr Lys Ala Val Glu Ala Gly Met Val Phe Gly
                85                  90                  95
His Arg Ala Glu His Lys Asp Pro Arg Ser Val Trp Glu Ser Tyr Trp
```

```
            100                 105                 110
Leu Leu Gly Ser Pro Trp Ala Glu Val Thr Arg Leu His Pro Arg Arg
        115                 120                 125
Ala Gln Leu Gly Ser Leu Pro Pro Pro Asp Pro Arg Thr Thr His Arg
    130                 135                 140
Arg Gly Ala Val Ser Ile Phe Leu Lys Gly Pro Phe Gly Asp Leu Val
145                 150                 155                 160
Leu Ser Val Glu Arg Thr Asp Val Ala Leu Ser Ser Gln His Ile Pro
                165                 170                 175
Gly Ser Gly Arg Pro Gln Leu Lys Gln Cys Gln Gly Pro Gln Gly Ser
            180                 185                 190
His Leu Asp Arg Pro Thr Ala Cys Asn Ser Ala Leu Leu Arg Arg Gln
        195                 200                 205
His  *
209
```

<210> 1477
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1477

```
Met His Thr Cys Gln Ile Tyr Ile Tyr Ser Thr Asn Val Thr Phe Leu
  1               5                  10                  15
Phe Phe Val Leu Asp Val Arg Ala Cys Ser Tyr Val Arg Tyr Leu His
            20                  25                  30
Lys Leu Leu His Tyr Phe Phe Leu Cys Asn Thr Phe Leu Phe Val Tyr
        35                  40                  45
Val Val Gln Ile Tyr Phe Phe Pro  *
    50                  55  56
```

<210> 1478
<211> 97
<212> PRT
<213> Homo sapiens

<400> 1478

```
Met Arg Ile Trp Ser Arg Ala Val Gly Asp Gly Pro Ala Ala Val Cys
  1               5                  10                  15
Cys Pro Leu Arg Ser Trp Cys Leu Leu Leu Trp Ala Leu Asp Ser Leu
            20                  25                  30
Asp Pro Ala Ala Val Thr Thr His Ala Ser Ala Met Leu Ser Gly Val
        35                  40                  45
Phe Thr Pro Pro Phe Val Ser Ala Leu Pro Val Gln Trp Met Gln Met
    50                  55                  60
Pro Val Leu Ser Phe Leu Ser Leu Thr Gly Ser Ser Val Tyr Val His
65                  70                  75                  80
Met Ala Leu Leu Ser Gly His Gln Gly Ser Asp Thr Cys Ser Gly Leu
                85                  90                  95  96
 *
```

```
<210> 1479
<211> 113
<212> PRT
<213> Homo sapiens

<400> 1479
Met Leu Ser Ile Ser Tyr Phe Ser Asn Ser Leu Met Leu Arg Leu Val
 1               5                  10                  15
Pro Leu Ala Ala Tyr Val Leu Ser Tyr Leu Ile Cys Ser Val Leu Leu
            20                  25                  30
His Ile Asn Gln Thr Thr Val Thr Thr Tyr Arg Gly Arg Lys Gln Arg
        35                  40                  45
Lys Lys Ile Gln Phe Ala Thr Gly Asn His Gln Ser Ala Gln Ser Tyr
    50                  55                  60
Ser Glu Leu Leu Ser Leu Ser Leu Ser Phe Ser Ser Leu Leu Ser Pro
65                  70                  75                  80
Val Phe Ser Leu Pro Ser Trp Ser Leu Pro Ser Leu Pro Pro Phe Phe
                85                  90                  95
Ser His Ser Pro His Gln Lys Gly Ile Met Met Val Pro Arg Ser Val
            100                 105                 110     112
 *

<210> 1480
<211> 91
<212> PRT
<213> Homo sapiens

<400> 1480
Met Arg Leu Ser Val Cys Leu Leu Leu Leu Thr Leu Ala Leu Cys Cys
 1               5                  10                  15
Tyr Arg Ala Asn Ala Val Val Cys Gln Ala Leu Gly Ser Glu Ile Thr
            20                  25                  30
Gly Phe Leu Leu Ala Gly Lys Pro Val Phe Lys Phe Gln Leu Ala Lys
        35                  40                  45
Phe Lys Ala Pro Leu Glu Ala Val Ala Ala Lys Met Glu Val Lys Lys
    50                  55                  60
Cys Val Asp Thr Met Ala Tyr Glu Lys Arg Val Leu Ile Thr Lys Thr
65                  70                  75                  80
Leu Gly Lys Ile Ala Glu Lys Cys Asp Arg  *
                85                  90

<210> 1481
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1481
Met Pro Gly Ser Ile Leu Ser Asn Leu His Val Leu Leu Lys Tyr Leu
 1               5                  10                  15
Phe Thr Phe Ala Glu Val Phe Leu Val Pro Gly Pro Phe Asn Val Leu
```

```
            20                  25                  30
Phe Leu Ser Leu Arg Leu Glu Thr Leu Thr Phe Phe Val Leu Trp Leu
        35                  40                  45
Val Pro Tyr Leu Ile  *
    50          53
```

<210> 1482
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1482

```
Met Glu Arg Trp Leu Gly Leu Ile Gln Thr Leu Trp Leu Pro Ala His
 1               5                  10                  15
Ser Gly Pro Leu Gly Arg Ala Trp Val Val Pro Arg Ala Thr Ser Gly
            20                  25                  30
His Tyr Trp Gly Gly Lys Gly Thr Asn Glu Gly Gly Gln Asp Lys Gly
        35                  40                  45
His Phe Pro Leu Pro Pro Arg  *
    50                  55
```

<210> 1483
<211> 202
<212> PRT
<213> Homo sapiens

<400> 1483

```
Met Leu Leu Leu Leu Gly Leu Cys Leu Gly Leu Ser Leu Cys Val Gly
 1               5                  10                  15
Ser Gln Glu Glu Ala Gln Ser Trp Gly His Ser Ser Glu Gln Asp Gly
            20                  25                  30
Leu Arg Val Pro Arg Gln Val Arg Leu Leu Gln Arg Leu Lys Thr Lys
        35                  40                  45
Pro Leu Met Thr Glu Phe Ser Val Lys Ser Thr Ile Ile Ser Arg Tyr
    50                  55                  60
Ala Phe Thr Thr Val Ser Cys Arg Met Leu Asn Arg Ala Ser Glu Asp
65                  70                  75                  80
Gln Asp Ile Glu Phe Gln Met Gln Ile Pro Ala Ala Ala Phe Ile Thr
                85                  90                  95
Asn Phe Thr Met Leu Ile Gly Asp Lys Val Tyr Gln Gly Glu Ile Thr
            100                 105                 110
Glu Arg Glu Lys Lys Ser Gly Asp Arg Val Lys Glu Lys Arg Asn Lys
        115                 120                 125
Thr Thr Glu Glu Asn Gly Glu Lys Gly Thr Glu Ile Phe Arg Ala Ser
    130                 135                 140
Ala Val Ile Pro Ser Lys Asp Lys Ala Ala Phe Phe Leu Ser Tyr Glu
145                 150                 155                 160
Glu Leu Leu Gln Arg Arg Leu Gly Lys Tyr Glu His Ser Ile Ser Val
                165                 170                 175
Arg Pro Gln Gln Leu Ser Gly Arg Leu Ser Val Asp Val Asn Ile Leu
            180                 185                 190
Glu Ser Ala Gly Ile Ala Ser Leu Glu Val
        195                 200     202
```

<210> 1484
<211> 477
<212> PRT
<213> Homo sapiens

<400> 1484
Met Pro Gln Leu Ser Leu Ser Trp Leu Gly Leu Gly Gln Val Ala Ala
1 5 10 15
Phe Pro Trp Leu Leu Leu Leu Leu Ala Gly Ala Ser Arg Leu Leu Ala
20 25 30
Gly Phe Leu Ala Trp Thr Tyr Ala Phe Tyr Asp Asn Cys Arg Arg Leu
35 40 45
Gln Tyr Phe Pro Gln Pro Pro Lys Gln Lys Trp Phe Trp Gly Gln Pro
50 55 60
Gly Pro Pro Ala Ile Ala Pro Lys Asp Asp Leu Ser Ile Arg Phe Leu
65 70 75 80
Lys Pro Trp Leu Gly Glu Gly Ile Leu Leu Ser Gly Gly Asp Lys Trp
85 90 95
Ser Arg His Arg Arg Met Leu Thr Pro Ala Phe His Phe Asn Ile Leu
100 105 110
Lys Ser Tyr Ile Thr Ile Phe Asn Lys Ser Ala Asn Ile Met Leu Asp
115 120 125
Lys Trp Gln His Leu Ala Ser Glu Gly Ser Ser Cys Leu Asp Met Phe
130 135 140
Glu His Ile Ser Leu Met Thr Leu Asp Ser Leu Gln Lys Cys Ile Phe
145 150 155 160
Ser Phe Asp Ser His Cys Gln Glu Arg Pro Ser Glu Tyr Ile Ala Thr
165 170 175
Ile Leu Glu Leu Ser Ala Leu Val Glu Lys Arg Ser Gln His Ile Leu
180 185 190
Gln His Met Asp Phe Leu Tyr Tyr Leu Ser His Asp Gly Arg Arg Phe
195 200 205
His Arg Ala Cys Arg Leu Val His Asp Phe Thr Asp Ala Val Ile Arg
210 215 220
Glu Arg Arg Arg Thr Leu Pro Thr Gln Gly Ile Asp Asp Phe Phe Lys
225 230 235 240
Asp Lys Ala Lys Ser Lys Thr Leu Asp Phe Ile Asp Val Leu Leu Leu
245 250 255
Ser Lys Asp Glu Asp Gly Lys Ala Leu Ser Asp Glu Asp Ile Arg Ala
260 265 270
Glu Ala Asp Thr Phe Met Phe Gly Gly His Asp Thr Thr Ala Ser Gly
275 280 285
Leu Ser Trp Val Leu Tyr Asn Leu Ala Arg His Pro Glu Tyr Gln Glu
290 295 300
Arg Cys Arg Gln Glu Val Gln Glu Leu Leu Lys Asp Arg Asp Pro Lys
305 310 315 320
Glu Ile Glu Trp Asp Asp Leu Ala Gln Leu Pro Phe Leu Thr Met Cys
325 330 335
Val Lys Glu Ser Leu Arg Leu His Pro Pro Ala Pro Phe Ile Ser Arg
340 345 350
Cys Cys Thr Gln Asp Ile Val Leu Pro Asp Gly Arg Val Ile Pro Lys
355 360 365
Gly Ile Thr Cys Leu Ile Asp Ile Ile Gly Val His His Asn Pro Thr
370 375 380
Val Trp Pro Asp Pro Glu Val Tyr Asp Pro Phe Arg Phe Asp Pro Glu

```
385                 390                 395                 400
Asn Ser Lys Gly Arg Ser Pro Leu Ala Phe Ile Pro Phe Ser Ala Gly
                405                 410                 415
Pro Arg Asn Cys Ile Gly Gln Ala Phe Ala Met Ala Glu Met Lys Val
            420                 425                 430
Val Leu Ala Leu Met Leu Leu His Phe Arg Phe Leu Pro Asp His Thr
        435                 440                 445
Glu Pro Arg Arg Lys Leu Glu Leu Ile Met Arg Ala Glu Gly Gly Leu
    450                 455                 460
Trp Leu Arg Val Glu Pro Leu Asn Val Ser Leu Gln  *
465                 470                 475 476
```

```
<210> 1485
<211> 67
<212> PRT
<213> Homo sapiens
```

```
<400> 1485
Met Ala Cys Cys Leu Phe Leu Asn Gly Ser Trp Leu Ser Met Ala Leu
 1               5                  10                  15
Lys Phe Phe Asn Cys Trp Gly Lys Lys Ile Lys Arg Ile Ile Phe Tyr
            20                  25                  30
Val Lys Ile Met Lys Phe Lys Phe Gln Cys Pro Gln Ile Asn Thr Ala
        35                  40                  45
Thr Tyr Ile His Leu His Gly Cys Phe Cys Thr Ser Met Ala Glu Leu
    50                  55                  60
Ser Ser  *
 65  66
```

```
<210> 1486
<211> 93
<212> PRT
<213> Homo sapiens
```

```
<400> 1486
Met Gly Ser Ser Val Leu Ser Ile Trp Ile Leu Ser Pro Ser Ile Tyr
 1               5                  10                  15
Pro Ile Leu Ser Pro Leu Ala Met Pro Cys Leu Ser Arg Thr Asp Leu
            20                  25                  30
Ile Arg Val Arg Arg Ile Gln Gly Ala Trp Pro Ser Glu Gly Thr Ala
        35                  40                  45
Ser Ser Ile Arg Gly Trp Val Leu Thr Lys Leu Arg Met Ser Ser Gly
    50                  55                  60
Lys Ala Leu Glu Ala Leu Tyr Cys Ile Pro Gly Ala Ala Gln His Pro
 65                 70                  75                  80
Gly Leu Gly Val Thr Arg Val Trp Ser Gly Arg Thr  *
                85                  90      92
```

```
<210> 1487
<211> 88
<212> PRT
```

<213> Homo sapiens

<400> 1487
Met Gln Lys Val Thr Leu Gly Leu Leu Val Phe Leu Ala Gly Phe Pro
1 5 10 15
Val Leu Asp Ala Asn Asp Leu Glu Asp Lys Asn Ser Pro Phe Tyr Tyr
20 25 30
Asp Trp His Ser Leu Gln Val Gly Gly Leu Ile Cys Ala Gly Val Leu
35 40 45
Cys Ala Met Gly Ile Ile Ile Val Met Ser Ala Lys Cys Lys Cys Lys
50 55 60
Phe Gly Gln Lys Ser Gly His His Pro Gly Glu Thr Pro Pro Leu Ile
65 70 75 80
Thr Pro Gly Ser Ala Gln Ser *
85 87

<210> 1488
<211> 268
<212> PRT
<213> Homo sapiens

<400> 1488
Met Gly Ser Ala Cys Ile Lys Val Thr Lys Tyr Phe Leu Phe Leu Phe
1 5 10 15
Asn Leu Ile Phe Phe Ile Leu Gly Ala Val Ile Leu Gly Phe Gly Val
20 25 30
Trp Ile Leu Ala Asp Lys Ser Ser Phe Ile Ser Val Leu Gln Thr Ser
35 40 45
Ser Ser Ser Leu Arg Met Gly Ala Tyr Val Phe Ile Gly Val Gly Ala
50 55 60
Val Thr Met Leu Met Gly Phe Leu Gly Cys Ile Gly Ala Val Asn Glu
65 70 75 80
Val Arg Cys Leu Leu Gly Leu Tyr Phe Ala Phe Leu Leu Leu Ile Leu
85 90 95
Ile Ala Gln Val Thr Ala Gly Ala Leu Phe Tyr Phe Asn Met Gly Lys
100 105 110
Leu Lys Gln Glu Met Gly Gly Ile Val Thr Glu Leu Ile Arg Asp Tyr
115 120 125
Asn Ser Ser Arg Glu Asp Ser Leu Gln Asp Ala Trp Asp Tyr Val Gln
130 135 140
Ala Gln Val Lys Cys Cys Gly Trp Val Ser Phe Tyr Asn Trp Thr Asp
145 150 155 160
Asn Ala Glu Leu Met Asn Arg Pro Glu Val Thr Tyr Pro Cys Ser Cys
165 170 175
Glu Val Lys Gly Glu Glu Asp Asn Ser Leu Ser Val Arg Lys Gly Phe
180 185 190
Cys Glu Ala Pro Gly Asn Arg Thr Gln Ser Gly Asn His Pro Glu Asp
195 200 205
Trp Pro Val Tyr Gln Glu Gly Cys Met Glu Lys Val Gln Ala Trp Leu
210 215 220
Gln Glu Asn Leu Gly Ile Ile Leu Gly Val Gly Val Gly Val Ala Ile
225 230 235 240
Ile Glu Leu Leu Gly Met Val Leu Ser Ile Cys Leu Cys Arg His Val
245 250 255
His Ser Glu Asp Tyr Ser Lys Val Pro Lys Tyr *

260 265 267

<210> 1489
<211> 832
<212> PRT
<213> Homo sapiens

<400> 1489
Met Thr Leu Ala Leu Ala Tyr Leu Leu Ala Leu Pro Gln Val Leu Asp
1 5 10 15
Ala Asn Arg Cys Phe Glu Lys Gln Ser Pro Ser Ala Leu Ser Leu Gln
20 25 30
Leu Ala Ala Tyr Tyr Tyr Ser Leu Gln Ile Tyr Ala Arg Leu Ala Pro
35 40 45
Cys Phe Arg Asp Lys Cys His Pro Leu Tyr Arg Ala Asp Pro Lys Glu
50 55 60
Leu Ile Lys Met Val Thr Arg His Val Thr Arg His Glu His Glu Ala
65 70 75 80
Trp Pro Glu Asp Leu Ile Ser Leu Thr Lys Gln Leu His Cys Tyr Asn
85 90 95
Glu Arg Leu Leu Asp Phe Thr Gln Ala Gln Ile Leu Gln Gly Leu Arg
100 105 110
Lys Gly Val Asp Val Gln Arg Phe Thr Ala Asp Asp Gln Tyr Lys Arg
115 120 125
Glu Thr Ile Leu Gly Leu Ala Glu Thr Leu Glu Glu Ser Val Tyr Ser
130 135 140
Ile Ala Ile Ser Leu Ala Gln Arg Tyr Ser Val Ser Arg Trp Glu Val
145 150 155 160
Phe Met Thr His Leu Glu Phe Leu Phe Thr Asp Ser Gly Leu Ser Thr
165 170 175
Leu Glu Ile Glu Asn Arg Ala Gln Asp Leu His Leu Phe Glu Thr Leu
180 185 190
Lys Thr Asp Pro Glu Ala Phe His Gln His Met Val Lys Tyr Ile Tyr
195 200 205
Pro Thr Ile Gly Gly Phe Asp His Glu Arg Leu Gln Tyr Tyr Phe Thr
210 215 220
Leu Leu Glu Asn Cys Gly Cys Ala Asp Leu Gly Asn Cys Ala Ile Lys
225 230 235 240
Pro Glu Thr His Ile Arg Leu Leu Lys Lys Phe Lys Val Val Ala Ser
245 250 255
Gly Leu Asn Tyr Lys Lys Leu Thr Asp Glu Asn Met Ser Pro Leu Glu
260 265 270
Ala Leu Glu Pro Val Leu Ser Ser Gln Asn Ile Leu Ser Ile Ser Lys
275 280 285
Leu Val Pro Lys Ile Pro Glu Lys Asp Gly Gln Met Leu Ser Pro Ser
290 295 300
Ser Leu Tyr Thr Ile Trp Leu Gln Lys Leu Phe Trp Thr Gly Asp Pro
305 310 315 320
His Leu Ile Lys Gln Val Pro Gly Ser Ser Pro Glu Trp Leu His Ala
325 330 335
Tyr Asp Val Cys Met Lys Tyr Phe Asp Arg Leu His Pro Gly Asp Leu
340 345 350
Ile Thr Val Val Asp Ala Val Thr Phe Ser Pro Lys Ala Val Thr Lys
355 360 365
Leu Ser Val Glu Ala Arg Lys Glu Met Thr Arg Lys Ala Ile Lys Thr
370 375 380

```
Val Lys His Phe Ile Glu Lys Pro Arg Lys Arg Asn Ser Glu Asp Glu
385                 390                 395                 400
Ala Gln Glu Ala Lys Asp Ser Lys Val Thr Tyr Ala Asp Thr Leu Asn
                405                 410                 415
His Leu Glu Lys Ser Leu Ala His Leu Glu Thr Leu Ser His Ser Phe
            420                 425                 430
Ile Leu Ser Leu Lys Asn Ser Glu Gln Glu Thr Leu Gln Lys Tyr Ser
        435                 440                 445
His Leu Tyr Asp Leu Ser Arg Ser Glu Lys Glu Lys Leu His Asp Glu
    450                 455                 460
Ala Val Ala Ile Cys Leu Asp Gly Gln Pro Leu Ala Met Ile Gln Gln
465                 470                 475                 480
Leu Leu Glu Val Ala Val Gly Pro Leu Asp Ile Ser Pro Lys Asp Ile
                485                 490                 495
Val Gln Ser Ala Ile Met Lys Ile Ile Ser Ala Leu Ser Gly Gly Ser
            500                 505                 510
Ala Asp Leu Gly Gly Pro Arg Asp Pro Leu Lys Val Leu Glu Gly Val
        515                 520                 525
Val Ala Ala Val His Ala Ser Val Asp Lys Gly Glu Glu Leu Val Ser
    530                 535                 540
Pro Glu Asp Leu Leu Glu Trp Leu Arg Pro Phe Cys Ala Asp Asp Ala
545                 550                 555                 560
Trp Pro Val Arg Pro Arg Ile His Val Leu Gln Ile Leu Gly Gln Ser
                565                 570                 575
Phe His Leu Thr Glu Glu Asp Ser Lys Leu Leu Val Phe Phe Arg Thr
            580                 585                 590
Glu Ala Ile Leu Lys Ala Ser Trp Pro Gln Arg Gln Val Asp Ile Ala
        595                 600                 605
Asp Ile Glu Asn Glu Glu Asn Arg Tyr Cys Leu Phe Met Glu Leu Leu
    610                 615                 620
Glu Ser Ser His His Glu Ala Glu Phe Gln His Leu Val Leu Leu Leu
625                 630                 635                 640
Gln Ala Trp Pro Pro Met Lys Ser Glu Tyr Val Ile Thr Asn Asn Pro
                645                 650                 655
Trp Val Arg Leu Ala Thr Val Met Leu Thr Arg Cys Thr Met Glu Asn
            660                 665                 670
Lys Glu Gly Leu Gly Asn Glu Val Leu Lys Met Cys Arg Ser Leu Tyr
        675                 680                 685
Asn Thr Lys Gln Met Leu Pro Ala Glu Gly Val Lys Glu Leu Cys Leu
    690                 695                 700
Leu Leu Leu Asn Gln Ser Leu Leu Leu Pro Ser Leu Lys Leu Leu Leu
705                 710                 715                 720
Glu Ser Arg Asp Glu His Leu His Glu Met Ala Leu Glu Gln Ile Thr
                725                 730                 735
Ala Val Thr Thr Val Asn Asp Ser Asn Cys Asp Gln Glu Leu Leu Ser
            740                 745                 750
Leu Leu Leu Asp Ala Lys Leu Leu Val Lys Cys Val Ser Thr Pro Phe
        755                 760                 765
Tyr Pro Arg Ile Val Asp His Leu Leu Ala Ser Leu Gln Gln Gly Arg
    770                 775                 780
Trp Asp Ala Glu Glu Leu Gly Arg His Leu Arg Glu Ala Gly His Glu
785                 790                 795                 800
Ala Glu Ala Gly Ser Leu Leu Leu Ala Val Arg Gly Thr His Gln Ala
                805                 810                 815
Phe Arg Thr Phe Ser Thr Ala Leu Arg Ala Ala Gln His Trp Val  *
            820                 825                 830 831
```

<210> 1490
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1490
Met Trp Phe Leu Leu Val Ser Val Val Cys Leu Tyr Gly Ile Gly Glu
1 5 10 15
Gly Asn Phe Phe Ser Leu Ala Ser Val Phe Ser Leu Leu Ser Leu Cys
20 25 30
Leu His Leu Leu Leu Trp Lys Arg Ala Phe Asp Arg Thr Asp Val Leu
35 40 45
Thr Ser Glu Trp Ile Phe *
50 54

<210> 1491
<211> 134
<212> PRT
<213> Homo sapiens

<400> 1491
Met Thr Thr Thr Phe Pro Pro Arg Lys Met Val Ala Gln Phe Leu Leu
1 5 10 15
Val Ala Gly Asn Val Ala Asn Ile Thr Thr Val Ser Leu Trp Glu Glu
20 25 30
Phe Ser Ser Ser Asp Leu Ala Asp Leu Arg Phe Leu Asp Met Ser Gln
35 40 45
Asn Gln Phe Gln Tyr Leu Pro Asp Gly Phe Leu Arg Lys Met Pro Ser
50 55 60
Leu Ser His Leu Asn Leu His Gln Asn Cys Leu Met Thr Leu His Ile
65 70 75 80
Arg Glu His Glu Pro Pro Gly Ala Leu Thr Glu Leu Asp Leu Ser His
85 90 95
Asn Gln Leu Ser Glu Leu His Leu Ala Pro Gly Leu Ala Ser Cys Leu
100 105 110
Gly Ser Leu Arg Leu Phe Asn Leu Ser Ser Asn Gln Leu Leu Gly Val
115 120 125
Pro Pro Gly Pro Leu Tyr
130 134

<210> 1492
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1492
Met Arg Ser Glu Trp Phe Tyr Lys Trp Phe Phe Pro Pro Phe Ala Leu
1 5 10 15
His Phe Ser Leu Leu Pro Pro Cys Glu Glu Gly His Val Cys Leu Pro
20 25 30
Met Cys His Glu Cys Lys Phe Pro Glu Ala Ser Pro Ala Thr Met Asn
35 40 45

Cys Glu Ser Ile Lys Pro Leu Phe Leu Ile Asn Tyr Pro Val Ser Asn
50 55 60
Lys Ser Leu Leu Ala Thr *
65 70

<210> 1493
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1493
Met Trp Ile Tyr Phe Trp Thr Leu Asn Ser Val Pro Val Ile Tyr Met
1 5 10 15
Ser Thr Leu Met Ser Ile Pro His Tyr Phe Asp Tyr Cys Cys Phe Ile
20 25 30
Val Ser Asp Ile Met Leu Pro Glu Ile Thr Phe Ser Thr Phe Ile Leu
35 40 45
Leu Leu Met Val Ala Leu Ala Ile Arg Gly Pro Leu His Phe Arg Arg
50 55 60
His Phe Arg Ile Asn Leu Ser Ile Ala Thr Lys Asn Ala *
65 70 75 77

<210> 1494
<211> 121
<212> PRT
<213> Homo sapiens

<400> 1494
Met Ala Gly Leu Asn Cys Gly Val Ser Ile Ala Leu Leu Gly Val Leu
1 5 10 15
Leu Leu Gly Ala Ala Arg Leu Pro Arg Gly Ala Glu Ala Phe Glu Ile
20 25 30
Ala Leu Pro Arg Glu Ser Asn Ile Thr Val Leu Ile Lys Leu Gly Thr
35 40 45
Pro Thr Leu Leu Ala Lys Pro Cys Tyr Ile Val Ile Ser Lys Arg His
50 55 60
Ile Thr Met Leu Ser Ile Lys Ser Gly Glu Arg Ile Val Phe Thr Phe
65 70 75 80
Ser Cys Gln Ser Pro Glu Asn His Phe Val Ile Glu Ile Gln Lys Asn
85 90 95
Ile Asp Cys Met Ser Gly Pro Cys Pro Phe Gly Glu Val Gln Leu Gln
100 105 110
Pro Ser Thr Ser Leu Leu Pro Thr Leu
115 120 121

<210> 1495
<211> 91
<212> PRT
<213> Homo sapiens

<400> 1495
Met Glu Asn Cys Val Gly Glu Arg Thr His Pro Leu Phe Val Val Tyr
1 5 10 15
Leu Ala Leu Gln Leu Val Val Leu Leu Trp Gly Leu Tyr Leu Ala Trp
20 25 30
Ser Gly Leu Arg Phe Phe Gln Pro Trp Gly Leu Trp Leu Arg Ser Ser
35 40 45
Gly Leu Leu Phe Ala Thr Phe Gln Leu Leu Ser Leu Phe Ser Leu Val
50 55 60
Ala Ser Leu Leu Leu Val Ser His Leu Tyr Leu Val Ala Ser Asn Thr
65 70 75 80
Thr Thr Trp Glu Phe Ile Ser Ser His His Val
85 90 91

<210> 1496
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1496
Met Ile Glu Thr Trp Leu Trp Leu Leu Leu Leu Asn Val Gly Gly Thr
1 5 10 15
Gly Gln Trp Ser Gly Pro Thr Phe Arg Arg Glu Asn Val Leu Pro Ala
20 25 30
Ala His Ile Gly Pro Lys Tyr Gly Pro Leu Leu Pro Ser Thr Ala Lys
35 40 45
Gly Thr Val Lys Val Ser Cys Pro Ser Ser Thr Pro His Pro Pro Leu
50 55 60
Gln Gly Lys Gly Thr Pro Asp *
65 70 71

<210> 1497
<211> 196
<212> PRT
<213> Homo sapiens

<400> 1497
Met Ala Pro Arg Ala Leu Pro Gly Ser Ala Val Leu Ala Ala Ala Val
1 5 10 15
Phe Val Gly Gly Ala Val Ser Ser Pro Leu Val Ala Pro Asp Asn Gly
20 25 30
Ser Ser Arg Thr Leu His Ser Arg Thr Glu Thr Thr Pro Ser Pro Ser
35 40 45
Asn Asp Thr Gly Asn Gly His Pro Glu Tyr Ile Ala Tyr Ala Leu Val
50 55 60
Pro Val Phe Phe Ile Met Gly Leu Phe Gly Val Leu Ile Cys His Leu
65 70 75 80
Leu Lys Lys Lys Gly Tyr Arg Cys Thr Thr Glu Ala Glu Gln Asp Ile
85 90 95
Glu Glu Glu Lys Val Glu Lys Ile Glu Leu Asn Asp Ser Val Asn Glu
100 105 110
Asn Ser Asp Thr Val Gly Gln Ile Val His Tyr Ile Met Lys Asn Glu
115 120 125

```
Ala Asn Ala Asp Val Leu Lys Ala Met Val Ala Asp Asn Ser Leu Tyr
    130                 135                 140
Asp Pro Glu Ser Pro Val Thr Pro Ser Thr Pro Gly Glu Pro Ala Ser
145                 150                 155                 160
Glu Ser Trp Ala Phe Val Thr Arg Gly Asp Ala Arg Glu Ala Arg Leu
                165                 170                 175
Trp Pro Ser Ser Ala Tyr Gly Gly Arg Cys Cys Arg Glu Gly Cys Val
            180                 185                 190
Ser Ser Val  *
        195
```

<210> 1498
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1498

```
Met Trp Ser Gln Ile Ala Phe Val Arg Ile Pro Phe Cys Phe Ser Leu
 1               5                  10                  15
Leu Ser His Ser Asn Ala Trp Phe Val Gln Lys Ala Ala Ser Gln Arg
            20                  25                  30
Gln Ala Ser Ile Ser Thr Ala Cys His Cys Pro Ala Glu Ala Gly Gly
        35                  40                  45
Glu Arg Ile Thr Val Ser Thr Thr Gly Ala Gln Arg Asn Ala Ala Met
    50                  55                  60
Val Pro Asp Leu Gln Ser Pro Arg Arg Ser  *
 65                 70              74
```

<210> 1499
<211> 62
<212> PRT
<213> Homo sapiens

<400> 1499

```
Met Pro Ser Leu Met Met Val Leu Glu Ala Arg Phe Val Ser Ser Cys
 1               5                  10                  15
Leu Ile Phe Pro Ser Arg Ala Met Pro Leu Leu Ser Arg Leu Leu Ala
            20                  25                  30
Ser Lys Gly Ser Ser Val Asn Val Leu Val Lys Val Leu Phe Gly Gly
        35                  40                  45
Thr Phe Ser Cys Ala Ser Ser Ile Ala Thr Gly Leu Thr  *
    50                  55                  60  61
```

<210> 1500
<211> 138
<212> PRT
<213> Homo sapiens

<400> 1500

```
Met Pro Ile Trp Lys Pro Phe Met Ala Trp Met Ala Ala Trp Ala Leu
```

```
 1               5                   10                  15
Ala Val Leu Ser Lys Leu Thr Lys Pro Ile His Leu Leu Trp Met Val
            20                  25                  30
Ala Arg Ser Ile Asn Thr Leu Glu Glu Met Ile Leu Pro Lys Gly Thr
        35                  40                  45
Asn Ile Cys Val Ser Ser Val Ser Pro Asn Ser Phe Ser Leu Leu Leu
    50                  55                  60
Leu Gln Glu Gly Arg Arg Leu Glu Asp Ala Val Arg Asp Gly Arg Asp
65                  70                  75                  80
Gly Arg Gly Gly Ala His Gly Cys Val Leu Leu Asp Ser Gly Glu Gly
                85                  90                  95
Arg Met Gln Cys Leu Gly His Ser Arg Ala Leu Ser Trp Val Trp His
            100                 105                 110
Lys Ala Ile Gly Ile Asp Glu Phe Pro Gly Gln Gly Ala His Leu Glu
        115                 120                 125
Arg Ala Arg His Leu Pro Ser His Trp  *
    130                 135     137
```

<210> 1501
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1501

```
Met Ile Leu Phe Thr Arg Ala Trp Phe Glu Leu Val Thr Leu Val Gln
 1               5                   10                  15
Phe Ile Ile Gly Ser Gln Met Leu Tyr Pro Tyr Leu His Ile Glu Glu
            20                  25                  30
Phe Val Ile Arg Lys Leu Pro Val Leu Leu Tyr Arg Lys Ser Val Ile
        35                  40                  45
Arg Tyr Gln Met Ala Ser Ser Pro Cys Leu Gln Met Phe Lys Gln Tyr
    50                  55                  60
Cys Gly Trp Ser Arg Lys Ser Leu Arg His Ala Val Lys Cys Arg Ala
65                  70                  75                  80
Arg  *
81
```

<210> 1502
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1502

```
Met Leu Leu Phe Leu Gly Phe Phe Ile Cys Ser Leu Phe Phe Ser Glu
 1               5                   10                  15
Leu Ser Thr Gly Thr Thr His Ser Leu Glu Ser Tyr Gln Ile Leu Leu
            20                  25                  30
Ser Lys Phe Phe Arg His Pro Leu Cys Thr Arg Thr Phe Arg Ile Leu
        35                  40                  45
Pro Pro Phe His Phe  *
    50          53
```

<210> 1503
<211> 62
<212> PRT
<213> Homo sapiens

<400> 1503
Met Gly Trp Pro Pro Ser Leu Trp Val Leu Ala Leu Ala Tyr Cys Cys
1 5 10 15
Lys Ala Pro Gln Arg Leu Cys Ser Gly Ser Ser Pro Cys Arg Phe Ser
20 25 30
Ser Arg Met Ser Ala Ser Pro Ala Thr Asn Arg Asn Glu Asn Thr Thr
35 40 45
Ser Trp Ile Ala Ser Leu His Lys Tyr Val Ile Ser Gln *
50 55 60 61

<210> 1504
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1504
Met Trp Lys Gln Ile Ser Pro Ile Gly Asn Leu Val Thr Ala Ile Phe
1 5 10 15
Phe Cys Val Leu Cys Gln Gln Arg Tyr Gln Trp Leu Ala Arg Asp Ala
20 25 30
Phe Asn Thr Gln Ser Ile Leu Ser Pro Pro Ile Trp Val *
35 40 45

<210> 1505
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1505
Met Val Ala Val Ser Leu Leu Cys Pro Trp Pro Ser Ser Trp Asn Arg
1 5 10 15
Arg Ser Cys Gly Arg Ser His Arg Asn Leu Gly Leu Phe Thr Ala Phe
20 25 30
Leu Ser Val Pro Glu Phe Val Ile Phe Gly Ala Cys Arg Tyr Trp *
35 40 45 47

<210> 1506
<211> 190
<212> PRT
<213> Homo sapiens

<400> 1506
Met Trp Leu Leu Gly Pro Leu Cys Leu Leu Leu Ser Ser Ala Ala Glu

```
 1               5                  10                  15
Ser Gln Leu Leu Pro Gly Asn Asn Phe Thr Asn Glu Cys Asn Ile Pro
            20                  25                  30
Gly Asn Phe Val Cys Ser Asn Gly Arg Cys Ile Pro Gly Ala Trp Gln
        35                  40                  45
Cys Asp Gly Leu Pro Asp Cys Phe Asp Lys Ser Asp Glu Lys Glu Cys
    50                  55                  60
Pro Lys Ala Lys Ser Lys Cys Gly Pro Thr Phe Phe Pro Cys Ala Ser
65                  70                  75                  80
Gly Ile His Cys Ile Ile Gly Arg Phe Arg Cys Asn Gly Phe Glu Asp
                85                  90                  95
Cys Pro Asp Gly Ser Asp Glu Glu Asn Cys Thr Ala Asn Pro Leu Leu
            100                 105                 110
Cys Ser Thr Ala Arg Tyr His Cys Lys Asn Gly Leu Cys Ile Asp Lys
        115                 120                 125
Ser Phe Ile Cys Asp Gly Gln Asn Asn Cys Gln Asp Asn Ser Asp Glu
    130                 135                 140
Glu Ser Cys Glu Ser Ser Gln Val Phe Arg Pro Gln Val Ser Glu Trp
145                 150                 155                 160
Gln Ala Arg Pro Arg Asp Leu Cys Ala Arg Trp Asn Ile Pro Phe Leu
                165                 170                 175
Gly Arg Leu Glu Arg Pro Trp Ser Phe Thr Ser Ser Gln Gln
            180                 185                 190
```

```
<210> 1507
<211> 60
<212> PRT
<213> Homo sapiens
```

```
<400> 1507
Met Tyr Arg Pro Ala Pro Pro Arg Gln Asn Arg Gln Leu His Pro Tyr
 1               5                  10                  15
Leu Leu Ala Ser Trp Pro Lys Ala Leu Asn Cys Thr Leu Cys Val Cys
            20                  25                  30
Val Cys Val Cys Ala Arg Val Cys Ala Cys Val Cys Met Trp Ser Val
        35                  40                  45
Thr Ser Leu Trp Leu Thr Cys Leu Ser Gly Val  *
    50                  55              59
```

```
<210> 1508
<211> 48
<212> PRT
<213> Homo sapiens
```

```
<400> 1508
Met Ser His His Cys Ala Trp Pro Lys Asn Phe Leu Leu Lys Met Leu
 1               5                  10                  15
Ser Thr Gly Arg Val Gln Trp Leu Met Pro Ile Ile Phe Leu Phe Phe
            20                  25                  30
Gln Lys Met Gly Gly Asn Met Val Gly Ser Gln Leu Lys Leu Ser  *
        35                  40                  45      47
```

<210> 1509
<211> 85
<212> PRT
<213> Homo sapiens

<400> 1509
Met Thr Gly Ser Arg Cys Glu Glu His Val Phe Ser Gln Gln Gln Pro
1 5 10 15
Gly His Ile Ala Ser Ile Leu Ile Pro Leu Leu Leu Leu Leu Leu Leu
20 25 30
Val Leu Ala Ala Gly Val Val Phe Trp Tyr Lys Arg Arg Val Gln Gly
35 40 45
Ala Lys Gly Phe His His Gln Arg Met Thr Asn Gly Ala Met Asn Val
50 55 60
Glu Ile Gly Asn Pro Thr Tyr Lys Met Tyr Glu Gly Gly Glu Pro Asp
65 70 75 80
Asp Val Gly Gly Leu
85

<210> 1510
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1510
Met Ala Ile Ser Trp Lys Pro Thr Gly Leu Pro Trp His Ser Met Leu
1 5 10 15
Gln Val Leu Leu Ala Ala Trp Leu Pro Gly Pro Thr Pro Thr Pro His
20 25 30
Ser Ala Leu Pro Ser Phe Ser Pro Pro Pro Ser Leu Pro Pro Lys Met
35 40 45
Cys Leu Pro Lys Cys Cys *
50 54

<210> 1511
<211> 108
<212> PRT
<213> Homo sapiens

<400> 1511
Met Val Gly Phe Gly Ala Asn Arg Arg Ala Gly Arg Leu Pro Ser Leu
1 5 10 15
Val Leu Gly Val Leu Leu Val Val Ile Val Val Leu Ala Phe Asn Tyr
20 25 30
Trp Ser Ile Ser Ser Arg His Val Leu Leu Gln Glu Glu Val Ala Glu
35 40 45
Leu Gln Gly Gln Val Gln Arg Thr Glu Val Ala Arg Gly Arg Leu Glu
50 55 60
Lys Arg Asn Ser Asp Leu Phe Ala Val Val Gly His Ala Gln Glu Thr
65 70 75 80
Asp Arg Pro Glu Gly Gly Arg Leu Arg Pro Pro Gln Gln Pro Ala Ala

85 90 95
Gly Gln Arg Gly Pro Arg Glu Glu Met Arg Gly *
100 105 107

<210> 1512
<211> 119
<212> PRT
<213> Homo sapiens

<400> 1512
Met Val Ala Arg Val Trp Ser Leu Met Arg Phe Leu Ile Lys Gly Ser
1 5 10 15
Val Ala Gly Gly Ala Val Tyr Leu Val Tyr Asp Gln Glu Leu Leu Gly
20 25 30
Pro Ser Asp Lys Ser Gln Ala Ala Leu Gln Lys Ala Gly Glu Val Val
35 40 45
Pro Pro Ala Met Tyr Gln Phe Ser Gln Tyr Val Cys Gln Gln Thr Gly
50 55 60
Leu Gln Ile Pro Gln Leu Pro Ala Pro Pro Lys Ile Tyr Phe Pro Ile
65 70 75 80
Arg Asp Ser Trp Asn Ala Gly Ile Met Thr Val Met Ser Ala Leu Ser
85 90 95
Val Ala Pro Ser Lys Ala Arg Glu Tyr Ser Lys Glu Gly Trp Glu Tyr
100 105 110
Val Lys Ala Arg Thr Lys *
115 118

<210> 1513
<211> 973
<212> PRT
<213> Homo sapiens

<400> 1513
Met Val Lys Ser Lys Trp Gly Leu Ala Leu Ala Ala Val Val Thr Val
1 5 10 15
Leu Ser Ser Leu Leu Met Ser Val Gly Leu Cys Thr Leu Phe Gly Leu
20 25 30
Thr Pro Thr Leu Asn Gly Gly Glu Ile Phe Pro Tyr Leu Val Val Val
35 40 45
Ile Gly Leu Glu Asn Val Leu Val Leu Thr Lys Ser Val Val Ser Thr
50 55 60
Pro Val Asp Leu Glu Val Lys Leu Arg Ile Ala Gln Gly Leu Ser Ser
65 70 75 80
Glu Ser Trp Ser Ile Met Lys Asn Met Ala Thr Glu Leu Gly Ile Ile
85 90 95
Leu Ile Gly Tyr Phe Thr Leu Val Pro Ala Ile Gln Glu Phe Cys Leu
100 105 110
Phe Ala Val Val Gly Leu Val Ser Asp Phe Phe Leu Gln Met Leu Phe
115 120 125
Phe Thr Thr Val Leu Ser Ile Asp Ile Arg Arg Met Glu Leu Ala Asp
130 135 140
Leu Asn Lys Arg Leu Pro Pro Glu Ala Cys Leu Pro Ser Ala Lys Pro
145 150 155 160

Val Gly Gln Pro Thr Arg Tyr Glu Arg Gln Leu Ala Val Arg Pro Ser
165 170 175
Thr Pro His Thr Ile Thr Leu Gln Pro Ser Ser Phe Arg Asn Leu Arg
180 185 190
Leu Pro Lys Arg Leu Arg Val Val Tyr Phe Leu Ala Arg Thr Arg Leu
195 200 205
Ala Gln Arg Leu Ile Met Ala Gly Thr Val Val Trp Ile Gly Ile Leu
210 215 220
Val Tyr Thr Asp Pro Ala Gly Leu Arg Asn Tyr Leu Ala Ala Gln Val
225 230 235 240
Thr Glu Gln Ser Pro Leu Gly Glu Gly Ala Leu Ala Pro Met Pro Val
245 250 255
Pro Ser Gly Met Leu Pro Pro Ser His Pro Asp Pro Ala Phe Ser Ile
260 265 270
Phe Pro Pro Asp Ala Pro Lys Leu Pro Glu Asn Gln Thr Ser Pro Gly
275 280 285
Glu Ser Pro Glu Arg Gly Gly Pro Ala Glu Val Val His Asp Ser Pro
290 295 300
Val Pro Glu Val Thr Trp Gly Pro Glu Asp Glu Glu Leu Trp Arg Lys
305 310 315 320
Leu Ser Phe Arg His Trp Pro Thr Leu Phe Ser Tyr Tyr Asn Ile Thr
325 330 335
Leu Ala Lys Arg Tyr Ile Ser Leu Leu Pro Val Ile Pro Val Thr Leu
340 345 350
Arg Leu Asn Pro Arg Glu Ala Leu Glu Gly Arg His Pro Gln Asp Gly
355 360 365
Arg Ser Ala Trp Pro Pro Pro Gly Pro Ile Pro Ala Gly His Trp Glu
370 375 380
Ala Gly Pro Lys Gly Pro Gly Gly Val Gln Ala His Gly Asp Val Thr
385 390 395 400
Leu Tyr Lys Val Ala Ala Leu Gly Leu Ala Thr Gly Ile Val Leu Val
405 410 415
Leu Leu Leu Leu Cys Leu Tyr Arg Val Leu Cys Pro Arg Asn Tyr Gly
420 425 430
Gln Leu Gly Gly Gly Pro Gly Arg Arg Arg Arg Gly Glu Leu Pro Cys
435 440 445
Asp Asp Tyr Gly Tyr Ala Pro Pro Glu Thr Glu Ile Val Pro Leu Val
450 455 460
Leu Arg Gly His Leu Met Asp Ile Glu Cys Leu Ala Ser Asp Gly Met
465 470 475 480
Leu Leu Val Ser Cys Cys Leu Ala Gly His Val Cys Val Trp Asp Ala
485 490 495
Gln Thr Gly Asp Cys Leu Thr Arg Ile Pro Arg Pro Gly Arg Gln Arg
500 505 510
Arg Asp Ser Gly Val Gly Ser Gly Leu Glu Ala Gln Glu Ser Trp Glu
515 520 525
Arg Leu Ser Asp Gly Gly Lys Ala Gly Pro Glu Glu Pro Gly Asp Ser
530 535 540
Pro Pro Leu Arg His Arg Pro Arg Gly Pro Pro Pro Pro Ser Leu Phe
545 550 555 560
Gly Asp Gln Pro Asp Leu Thr Cys Leu Ile Asp Thr Asn Phe Ser Ala
565 570 575
Gln Pro Arg Ser Ser Gln Pro Thr Gln Pro Glu Pro Arg His Arg Ala
580 585 590
Val Cys Gly Arg Ser Arg Asp Ser Pro Gly Tyr Asp Phe Ser Cys Leu
595 600 605
Val Gln Arg Val Tyr Gln Glu Glu Gly Leu Ala Ala Val Cys Thr Pro
610 615 620
Ala Leu Arg Pro Pro Ser Pro Gly Pro Val Leu Ser Gln Ala Pro Glu

```
625                 630                 635                 640
Asp Glu Gly Gly Ser Pro Glu Lys Gly Ser Pro Ser Leu Ala Trp Ala
                645                 650                 655
Pro Ser Ala Glu Gly Ser Ile Trp Ser Leu Glu Leu Gln Gly Asn Leu
            660                 665                 670
Ile Val Val Gly Arg Ser Ser Gly Arg Leu Glu Val Trp Asp Ala Ile
        675                 680                 685
Glu Gly Val Leu Cys Cys Ser Ser Glu Glu Val Ser Ser Gly Ile Thr
    690                 695                 700
Ala Leu Val Phe Leu Asp Lys Arg Ile Val Ala Ala Arg Leu Asn Gly
705                 710                 715                 720
Ser Leu Asp Phe Phe Ser Leu Glu Thr His Thr Ala Leu Ser Pro Leu
                725                 730                 735
Gln Phe Arg Gly Thr Pro Gly Arg Gly Ser Ser Pro Ala Ser Pro Val
            740                 745                 750
Tyr Ser Ser Ser Asp Thr Val Ala Cys His Leu Thr His Thr Val Pro
        755                 760                 765
Cys Ala His Gln Lys Pro Ile Thr Ala Leu Lys Ala Ala Ala Gly Arg
    770                 775                 780
Leu Val Thr Gly Ser Gln Asp His Thr Leu Arg Val Phe Arg Leu Glu
785                 790                 795                 800
Asp Ser Cys Cys Leu Phe Thr Leu Gln Gly His Ser Gly Ala Ile Thr
                805                 810                 815
Thr Val Tyr Ile Asp Gln Thr Met Val Leu Ala Ser Gly Gly Gln Asp
            820                 825                 830
Gly Ala Ile Cys Leu Trp Asp Val Leu Thr Gly Ser Arg Val Ser His
        835                 840                 845
Val Phe Ala His Arg Gly Asp Val Thr Ser Leu Thr Cys Thr Thr Ser
    850                 855                 860
Cys Val Ile Ser Ser Gly Leu Asp Asp Leu Ile Ser Ile Trp Asp Arg
865                 870                 875                 880
Ser Thr Gly Ile Lys Phe Tyr Ser Ile Gln Gln Asp Leu Gly Cys Gly
                885                 890                 895
Ala Ser Leu Gly Val Ile Ser Asp Asn Leu Leu Val Thr Gly Gly Gln
            900                 905                 910
Gly Cys Val Ser Phe Trp Asp Leu Asn Tyr Gly Asp Leu Leu Gln Thr
        915                 920                 925
Val Tyr Leu Gly Lys Asn Ser Glu Ala Gln Pro Ala Arg Gln Ile Leu
    930                 935                 940
Val Leu Asp Asn Ala Ala Ile Val Cys Asn Phe Gly Ser Glu Leu Ser
945                 950                 955                 960
Leu Val Tyr Val Pro Ser Val Leu Glu Lys Leu Asp  *
                965                 970     972
```

<210> 1514
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1514

```
Met Ile Ser Ser Trp Pro Phe Ser Arg Val Val Arg Phe Trp Phe Leu
 1               5                  10                  15
His Gln Met Val Leu Asp Leu Cys Leu Gly Gln Gly Val Pro Gln Gln
            20                  25                  30
Asn Leu Glu Asn Pro Arg Glu Arg Lys Ser Phe Leu Leu Phe Val Arg
        35                  40                  45
```

Asn Leu Ile Ile Asp Ser Ser Leu Lys Ile Leu Ser Gln Glu Pro Ser
50 55 60
Asn Leu Trp Gln Arg Ile Pro Lys Met Met Thr Thr *
65 70 75 76

<210> 1515
<211> 148
<212> PRT
<213> Homo sapiens

<400> 1515
Met Leu Gly Ser Arg Leu Met Thr Leu Thr Val Cys Ala Gly Ala Leu
1 5 10 15
Ala Arg Gly Arg Gly Thr Gly Thr Cys Glu Thr Arg Gln Glu Gly Lys
20 25 30
Gly Gln Asn His Ser Thr Leu Ala Trp Pro His Glu Glu Pro Gly Ala
35 40 45
Ser Thr Gly Arg Asp Gly Gly Lys Leu Pro Arg Gly Gln Cys Leu Leu
50 55 60
Glu Lys Gly Pro Gly Gly Ala Gly Asp Lys Val Ser Lys Ile Phe Pro
65 70 75 80
Ser Cys Ala Leu Ala Leu Leu Leu Ser Leu Ala Asn Pro Gly Pro Arg
85 90 95
Gly Pro Arg Glu Phe His Leu Cys Trp Gly Trp Leu Asp Arg Gly Val
100 105 110
Thr Gln Glu Ala Val His Val Gly Glu Lys Arg Gly Gly Leu Gly Ser
115 120 125
Gly Arg Lys Gly Gly Trp Trp Pro Gly Trp Asp Pro Gly Cys Arg Asp
130 135 140
Val Ile Thr *
145 147

<210> 1516
<211> 274
<212> PRT
<213> Homo sapiens

<400> 1516
Met Arg Gly Ser Gln Glu Val Leu Leu Met Trp Leu Leu Val Leu Ala
1 5 10 15
Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val Cys Ala
20 25 30
Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val Gln Arg Val
35 40 45
Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg Ala Cys Ser Thr
50 55 60
Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg Ser Pro Gly Leu Ala
65 70 75 80
Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro Gly Trp Lys Arg Thr Ser
85 90 95
Gly Leu Pro Gly Ala Cys Gly Ala Ala Ile Cys Gln Pro Pro Cys Arg
100 105 110
Asn Gly Gly Ser Cys Val Gln Pro Gly Arg Cys Arg Cys Pro Ala Gly

```
        115                 120                 125
Trp Arg Gly Asp Thr Cys Gln Ser Asp Val Asp Glu Cys Ser Ala Arg
    130                 135                 140
Arg Gly Gly Cys Pro Gln Arg Cys Val Asn Thr Ala Gly Ser Tyr Trp
145                 150                 155                 160
Cys Gln Cys Trp Glu Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys
                165                 170                 175
Val Pro Lys Gly Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val
            180                 185                 190
Asp Ser Ala Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp
        195                 200                 205
Leu Leu Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu
    210                 215                 220
Ala Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu
225                 230                 235                 240
Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu Gln
                245                 250                 255
Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys Lys Asp
            260                 265                 270
Ser  *
273


     <210> 1517
     <211> 246
     <212> PRT
     <213> Homo sapiens


     <400> 1517
Met Thr Leu Phe Pro Val Leu Leu Phe Leu Val Ala Gly Leu Leu Pro
  1               5                  10                  15
Ser Phe Pro Ala Asn Glu Asp Lys Asp Pro Ala Phe Thr Ala Leu Leu
            20                  25                  30
Thr Thr Gln Thr Gln Val Gln Arg Glu Ile Val Asn Lys His Asn Glu
        35                  40                  45
Leu Arg Arg Ala Val Ser Pro Pro Ala Arg Asn Met Leu Lys Met Glu
    50                  55                  60
Trp Asn Lys Glu Ala Ala Ala Asn Ala Gln Lys Trp Ala Asn Gln Cys
 65                  70                  75                  80
Asn Tyr Arg His Ser Asn Pro Lys Asp Arg Met Thr Ser Leu Lys Cys
                85                  90                  95
Gly Glu Asn Leu Tyr Met Ser Ser Ala Ser Ser Ser Trp Ser Gln Ala
            100                 105                 110
Ile Gln Ser Trp Phe Asp Glu Tyr Asn Asp Phe Asp Phe Gly Val Gly
        115                 120                 125
Pro Lys Thr Pro Asn Ala Val Val Gly His Tyr Thr Gln Val Val Trp
    130                 135                 140
Tyr Ser Ser Tyr Leu Val Gly Cys Gly Asn Ala Tyr Cys Pro Asn Gln
145                 150                 155                 160
Lys Val Leu Lys Tyr Tyr Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn
                165                 170                 175
Trp Ala Asn Arg Leu Tyr Val Pro Tyr Glu Gln Gly Ala Pro Cys Ala
            180                 185                 190
Ser Cys Pro Asp Asn Cys Asp Asp Gly Leu Cys Thr Asn Gly Cys Lys
        195                 200                 205
Tyr Glu Asp Leu Tyr Ser Asn Cys Lys Ser Leu Lys Leu Thr Leu Thr
    210                 215                 220
```

```
Cys Lys His Gln Leu Val Arg Asp Ser Cys Lys Ala Ser Cys Asn Cys
225                 230                 235                 240
Ser Asn Ser Ile Tyr  *
                245


    <210> 1518
    <211> 122
    <212> PRT
    <213> Homo sapiens


    <400> 1518
Met Arg Asn Arg Arg Thr Glu Arg Thr Cys Thr Pro Pro Leu Ala Ser
  1               5                  10                  15
Pro Tyr Asn Leu Val Pro His Leu Gln Asn Leu Leu Ala Val Leu Leu
             20                  25                  30
Met Ile Leu Val Leu Thr Pro Met Val Leu Asn Pro His Lys Leu Tyr
         35                  40                  45
Gln Met Met Thr Gln Asn Ile Leu Leu Gln Lys Pro Gln Lys Asn Phe
     50                  55                  60
Ile Trp Thr Ala Leu Lys Gly Asn Leu Ser Tyr Pro Arg Asn Leu Leu
 65                  70                  75                  80
Leu Gln Ser His Leu Ser Leu Leu Leu His Ser Leu Leu Leu Glu Leu
                 85                  90                  95
Asn Gln Arg Val Cys Leu Leu Pro Arg Ser Leu Ile Asp Pro Gly Lys
            100                 105                 110
Arg Leu Lys Lys Lys Pro Met Glu Thr Phe
        115                 120     122


    <210> 1519
    <211> 249
    <212> PRT
    <213> Homo sapiens


    <400> 1519
Met Gly Leu Ser Ile Phe Leu Leu Leu Cys Val Leu Gly Leu Ser Gln
  1               5                  10                  15
Ala Ala Thr Pro Lys Ile Phe Asn Gly Thr Glu Cys Gly Arg Asn Ser
             20                  25                  30
Gln Pro Trp Gln Val Gly Leu Phe Glu Gly Thr Ser Leu Arg Cys Gly
         35                  40                  45
Gly Val Leu Ile Asp His Arg Trp Val Leu Thr Ala Ala His Cys Ser
     50                  55                  60
Gly Ser Arg Tyr Trp Val Arg Leu Gly Glu His Ser Leu Ser Gln Leu
 65                  70                  75                  80
Asp Trp Thr Glu Gln Ile Arg His Ser Gly Phe Ser Val Thr His Pro
                 85                  90                  95
Gly Tyr Leu Gly Ala Ser Thr Ser His Glu His Asp Leu Arg Leu Leu
            100                 105                 110
Arg Leu Arg Leu Pro Val Arg Val Thr Ser Ser Val Gln Pro Leu Pro
        115                 120                 125
Leu Pro Asn Asp Cys Ala Thr Ala Gly Thr Glu Cys His Val Ser Gly
    130                 135                 140
Trp Gly Ile Thr Asn His Pro Arg Asn Pro Phe Pro Asp Leu Leu Gln
```

```
145                 150                 155                 160
Cys Leu Asn Leu Ser Ile Val Ser His Ala Thr Cys His Gly Val Tyr
                165                 170                 175
Pro Gly Arg Ile Thr Ser Asn Met Val Cys Ala Gly Gly Val Pro Gly
            180                 185                 190
Gln Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Gly Gly
        195                 200                 205
Val Leu Gln Gly Leu Val Ser Trp Gly Ser Val Gly Pro Cys Gly Gln
    210                 215                 220
Asp Gly Ile Pro Gly Val Tyr Thr Tyr Ile Cys Lys Tyr Val Asp Trp
225                 230                 235                 240
Ile Arg Met Ile Met Arg Asn Asn  *
                245         248
```

```
    <210> 1520
    <211> 292
    <212> PRT
    <213> Homo sapiens
```

```
    <400> 1520
Met Leu Val Leu Gln Ile Leu Leu Cys Ile Arg Glu Phe Ile Leu Glu
 1               5                  10                  15
Arg Ser Leu Ile Asn Val Lys Asn Val Ala Lys Ser Leu Ala Val Val
            20                  25                  30
Leu Ala Leu Leu Asn Ile Gly Lys Phe Ile Leu Glu Lys Ile Phe Thr
        35                  40                  45
Asn Ala Lys Tyr Val Leu Asn Leu Leu Leu Val Ser Gln Ile Leu Leu
    50                  55                  60
Cys Met Arg Glu Phe Ile Leu Glu Arg Asn Pro Ile Asn Val Lys Asn
65                  70                  75                  80
Val Ala Lys Pro Phe Leu Ile Val His Thr Leu Phe Asp Ile Ile Glu
                85                  90                  95
Phe Ile Leu Glu Lys Asn His Thr Asn Val Lys His Val Ala Asn Leu
            100                 105                 110
Leu Val Thr Pro Gln Val Leu Leu Cys Ile Gly Glu Leu Ile Leu Glu
        115                 120                 125
Arg Asn Pro Ile His Val Lys Asn Val Ala Lys Pro Leu Val Ile Val
    130                 135                 140
Gln Met Leu Phe Ser Ile Gly Glu Phe Ile Leu Ala Arg Asp Pro Thr
145                 150                 155                 160
Asn Val Lys Asn Val Ala Lys Pro Ser Thr Ile Gly His Thr Ser Leu
                165                 170                 175
His Ile Lys Glu Val Ile Leu Glu Arg Asp Pro Thr Asn Val Lys Asn
            180                 185                 190
Val Ala Lys Pro Ser Thr Leu Gly His Thr Ser Leu His Ile Gly Glu
        195                 200                 205
Asp Ile Leu Glu Arg Asp Pro Thr Asn Val Met Asn Val Val Lys Pro
    210                 215                 220
Ser Ala Ile Gly His Thr Ser Leu His Ile Gly Glu Val Ile Val Glu
225                 230                 235                 240
Arg Asp Pro Thr Asn Val Lys Asn Val Ala Lys Pro Leu Thr Leu Gly
                245                 250                 255
His Thr Ser Leu His Ile Arg Glu Val Ile Leu Glu Lys Asn Phe Lys
            260                 265                 270
Asn Val Lys His Gly Ala Asp Phe Leu Leu Val Thr His Val Leu Leu
        275                 280                 285
```

Cys Ile Arg *
290 291

<210> 1521
<211> 129
<212> PRT
<213> Homo sapiens

<400> 1521
Met Gly Ser Thr Ala Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly
1 5 10 15
Val Cys Ala Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20 25 30
Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe
35 40 45
Thr Ser Tyr Trp Ile Gly Trp Val Arg Gln Met Pro Gly Lys Gly Leu
50 55 60
Glu Trp Met Gly Ile Ile Tyr Pro Gly Asp Ser Asp Thr Arg Tyr Ser
65 70 75 80
Pro Ser Phe Gln Gly Gln Val Thr Ile Ser Ala Asp Lys Ser Ile Ser
85 90 95
Thr Ala Tyr Leu Gln Trp Ser Ser Leu Lys Ala Ser Asp Thr Ala Met
100 105 110
Tyr Tyr Cys Ala Arg His Thr Val Arg Glu Thr Ser Pro Glu Pro Val
115 120 125 128
*

<210> 1522
<211> 66
<212> PRT
<213> Homo sapiens

<400> 1522
Met Val Val Val Leu Pro Cys Phe Ala Val Leu Lys Leu Leu Phe Gly
1 5 10 15
Gln Ser Lys Leu Gly Pro Met Gln Pro Ser Gln Ser Gly Leu Asp Pro
20 25 30
Val Gly Ala Gly Met Ser Ala Ser Ile Ala Asp Gly Ser Arg Ala Thr
35 40 45
Ala Asp Lys Ala Val Leu Leu Asp Pro Thr Ser Leu Leu Leu Glu Tyr
50 55 60
Thr *
65

<210> 1523
<211> 131
<212> PRT
<213> Homo sapiens

<400> 1523

Met Ile Leu Leu Ala Phe Leu Val Cys Trp Gly Pro Leu Phe Gly Leu
1 5 10 15
Leu Leu Ala Asp Val Phe Gly Ser Asn Leu Trp Ala Gln Glu Tyr Leu
20 25 30
Arg Gly Met Asp Trp Ile Leu Ala Leu Ala Val Leu Asn Ser Ala Val
35 40 45
Asn Pro Ile Ile Tyr Ser Phe Arg Ser Arg Glu Val Cys Arg Ala Val
50 55 60
Leu Ser Phe Leu Cys Cys Gly Cys Leu Arg Leu Gly Met Arg Gly Pro
65 70 75 80
Gly Asp Cys Leu Ala Arg Ala Val Glu Ala His Ser Gly Ala Ser Thr
85 90 95
Thr Asp Ser Ser Leu Arg Pro Arg Asp Ser Phe Arg Gly Ser Arg Ser
100 105 110
Leu Ser Phe Arg Met Arg Glu Pro Leu Ser Ser Ile Ser Ser Val Arg
115 120 125
Ser Ile *
130

<210> 1524
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1524

Met Lys Phe Phe Val Phe Ala Leu Ile Leu Ala Leu Met Leu Ser Met
1 5 10 15
Thr Gly Ala Asp Ser His Ala Lys Arg His His Gly Tyr Lys Arg Lys
20 25 30
Phe His Glu Lys His His Ser His Arg Gly Tyr Arg Ser Asn Tyr Leu
35 40 45
Tyr Asp Asn *
50 51

<210> 1525
<211> 246
<212> PRT
<213> Homo sapiens

<400> 1525

Met Thr Leu Phe Pro Val Leu Leu Phe Leu Val Ala Gly Leu Leu Pro
1 5 10 15
Ser Phe Pro Ala Asn Glu Asp Lys Asp Pro Ala Phe Thr Ala Leu Leu
20 25 30
Thr Thr Gln Thr Gln Val Gln Arg Glu Ile Val Asn Lys His Asn Glu
35 40 45
Leu Arg Arg Ala Val Ser Pro Pro Ala Arg Asn Met Leu Lys Met Glu
50 55 60
Trp Asn Lys Glu Ala Ala Ala Asn Ala Gln Lys Trp Ala Asn Gln Cys
65 70 75 80
Asn Tyr Arg His Ser Asn Pro Lys Asp Arg Met Thr Ser Leu Lys Cys
85 90 95

```
Gly Glu Asn Leu Tyr Met Ser Ser Ala Ser Ser Ser Trp Ser Gln Ala
            100                 105                 110
Ile Gln Ser Trp Phe Asp Glu Tyr Asn Asp Phe Asp Phe Gly Val Gly
        115                 120                 125
Pro Lys Thr Pro Asn Ala Val Val Gly His Tyr Thr Gln Val Val Trp
    130                 135                 140
Tyr Ser Ser Tyr Leu Val Gly Cys Gly Asn Ala Tyr Cys Pro Asn Gln
145                 150                 155                 160
Lys Val Leu Lys Tyr Tyr Tyr Val Cys Gln Tyr Cys Pro Ala Gly Asn
                165                 170                 175
Trp Ala Asn Arg Leu Tyr Val Pro Tyr Glu Gln Gly Ala Pro Cys Ala
            180                 185                 190
Ser Cys Pro Asp Asn Cys Asp Asp Gly Leu Cys Thr Asn Gly Cys Lys
        195                 200                 205
Tyr Glu Asp Leu Tyr Ser Asn Cys Lys Ser Leu Lys Leu Thr Leu Thr
    210                 215                 220
Cys Lys His Gln Leu Val Arg Asp Ser Cys Lys Ala Ser Cys Asn Cys
225                 230                 235                 240
Ser Asn Ser Ile Tyr  *
                245
```

```
<210> 1526
<211> 47
<212> PRT
<213> Homo sapiens
```

```
<400> 1526
Met Val Leu Gly Ala Arg Ala Val Ile Ser Phe Cys Ile Leu Ser Ala
  1               5                  10                  15
Met Pro Gly Tyr Met Val Val Pro Pro Glu Arg Thr Leu Leu Ala Tyr
             20                  25                  30
Lys Ser Leu Arg Met Ser Met Ser His Phe Met Met Glu Leu  *
         35                  40                  45  46
```

```
<210> 1527
<211> 118
<212> PRT
<213> Homo sapiens
```

```
<400> 1527
Met Ser Ala Arg Gly Trp Pro Cys Glu Ala Phe Val Leu Ala Gln Val
  1               5                  10                  15
Cys Trp Cys Trp Leu Cys Val Arg Gly Arg Leu Cys Glu Ala Leu Thr
             20                  25                  30
Leu Ala Gln Val Arg Arg His Gln Val Cys Val Pro Gly Gln Pro Cys
         35                  40                  45
Glu Ala Leu Thr Leu Thr Gln Val Arg Arg His Gln Leu Cys Val Trp
     50                  55                  60
Gly Arg Pro Cys Glu Ala Leu Thr Leu Ala Gln Val Cys Trp Leu Trp
 65                  70                  75                  80
Leu Cys Val Gln Gly Trp Pro His Glu Ala Leu Thr Leu Ala Gln Val
                 85                  90                  95
Arg Gln His Gln Val Cys Val Arg Gly Arg Pro Cys Glu Ala Leu Ser
```

```
            100                 105                 110
Leu Ala Gln Val Arg  *
        115     117


     <210> 1528
     <211> 92
     <212> PRT
     <213> Homo sapiens


     <400> 1528
Met Lys Val Ser Ala Ala Ala Leu Ala Val Ile Leu Ile Ala Thr Ala
  1               5                  10                  15
Leu Cys Ala Pro Ala Ser Ala Ser Pro Tyr Ser Ser Asp Thr Thr Pro
             20                  25                  30
Cys Cys Phe Ala Tyr Ile Ala Arg Pro Leu Pro Arg Ala His Ile Lys
         35                  40                  45
Glu Tyr Phe Tyr Thr Ser Gly Lys Cys Ser Asn Pro Ala Val Val Phe
     50                  55                  60
Val Thr Arg Lys Asn Arg Gln Val Cys Ala Asn Pro Glu Lys Lys Trp
 65                  70                  75                  80
Val Arg Glu Tyr Ile Asn Ser Leu Glu Met Ser  *
                 85                  90  91


     <210> 1529
     <211> 71
     <212> PRT
     <213> Homo sapiens


     <400> 1529
Met Tyr Cys Trp Trp Cys Trp Leu Cys Thr Ala Met Val Cys Ser Gly
  1               5                  10                  15
Val Leu Cys Arg Pro Leu Trp Glu Pro Leu Ser Pro Arg Leu Ser Val
             20                  25                  30
Phe Trp Ala Gly Arg Tyr Leu Gly Phe Trp Cys Met Gly Cys Cys Arg
         35                  40                  45
Met Ala Met Tyr Cys Val Ser Ser Cys Ser Arg Phe Ser Gly Glu Ser
     50                  55                  60
Gly Phe Arg Arg Ile Pro  *
 65                  70


     <210> 1530
     <211> 85
     <212> PRT
     <213> Homo sapiens


     <400> 1530
Met Val Leu Arg Val Cys Phe Leu Ile Phe Val Leu Tyr His Asn Leu
  1               5                  10                  15
Gly Lys Tyr Ile Phe Ile Ile Tyr Val Tyr Arg Cys Lys Asp Arg Phe
             20                  25                  30
```

Thr Lys Gly Cys Ile Thr Val Val Gln Gln Ser Gly Ile Leu Thr Glu
35 40 45
Leu Lys Gly Gln Gly Ser Phe Leu Tyr Val Leu Leu Cys Leu Asp Ile
50 55 60
Thr Leu Leu Val Arg Ser Val Phe Lys Asn Asp Asn Ser Arg Phe Asp
65 70 75 80
Phe Gln Ala Asn *
84

<210> 1531
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1531
Met Leu Pro Gln Val Phe Leu Gly Phe Thr Lys Val Arg Leu Leu Arg
1 5 10 15
Leu Arg Asn Pro Trp Gly Cys Val Glu Trp Thr Gly Ala Trp Ser Asp
20 25 30
Arg Trp Asp Gly Ser Gly Val Gly Val Gly Leu Asp Pro Thr Cys Pro
35 40 45
Pro Leu Thr Pro Gln Ser Leu Gln Leu Pro Thr Leu
50 55 60

<210> 1532
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1532
Met Leu Gly Leu His Gln Leu Cys Ser Leu Leu Val Gln Leu Asp Phe
1 5 10 15
Tyr Leu Gln Tyr Leu Tyr Gly Gln Phe Gln Gln Phe Ser Met Cys Leu
20 25 30
Asp Leu Asn His Val His Phe Leu Met Phe Pro Ser Leu Val Cys Ala
35 40 45
Met Phe Arg Phe *
50 52

<210> 1533
<211> 741
<212> PRT
<213> Homo sapiens

<400> 1533
Met Ala Glu Ser Arg Gly Arg Leu Tyr Leu Trp Met Cys Leu Ala Ala
1 5 10 15
Ala Leu Ala Ser Phe Leu Met Gly Phe Met Val Gly Trp Phe Ile Lys
20 25 30
Pro Leu Lys Glu Thr Thr Thr Ser Val Arg Tyr His Gln Ser Ile Arg

```
        35                  40                  45
Trp Lys Leu Val Ser Glu Met Lys Ala Glu Asn Ile Lys Ser Phe Leu
    50                  55                  60
Arg Ser Phe Thr Lys Leu Pro His Leu Ala Gly Thr Glu Gln Asn Phe
65                  70                  75                  80
Leu Leu Ala Lys Lys Ile Gln Thr Gln Trp Lys Lys Phe Gly Leu Asp
                85                  90                  95
Ser Ala Lys Leu Val His Tyr Asp Val Leu Leu Ser Tyr Pro Asn Glu
            100                 105                 110
Thr Asn Ala Asn Tyr Ile Ser Ile Val Asp Glu His Glu Thr Glu Ile
        115                 120                 125
Phe Lys Thr Ser Tyr Leu Glu Pro Pro Pro Asp Gly Tyr Glu Asn Val
    130                 135                 140
Thr Asn Ile Val Pro Pro Tyr Asn Ala Phe Ser Ala Gln Gly Met Pro
145                 150                 155                 160
Glu Gly Asp Leu Val Tyr Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe
                165                 170                 175
Lys Leu Glu Arg Glu Met Gly Ile Asn Cys Thr Gly Lys Ile Val Ile
            180                 185                 190
Ala Arg Tyr Gly Lys Ile Phe Arg Gly Asn Lys Val Lys Asn Ala Met
        195                 200                 205
Leu Ala Gly Ala Ile Gly Ile Ile Leu Tyr Ser Asp Pro Ala Asp Tyr
    210                 215                 220
Phe Ala Pro Glu Val Gln Pro Tyr Pro Lys Gly Trp Asn Leu Pro Gly
225                 230                 235                 240
Thr Ala Ala Gln Arg Gly Asn Val Leu Asn Leu Asn Gly Ala Gly Asp
                245                 250                 255
Pro Leu Thr Pro Gly Tyr Pro Ala Lys Glu Tyr Thr Phe Arg Leu Asp
            260                 265                 270
Val Glu Glu Gly Val Gly Ile Pro Arg Ile Pro Val His Pro Ile Gly
        275                 280                 285
Tyr Asn Asp Ala Glu Ile Leu Leu Arg Tyr Leu Gly Gly Ile Ala Pro
    290                 295                 300
Pro Asp Lys Ser Trp Lys Gly Ala Leu Asn Val Ser Tyr Ser Ile Gly
305                 310                 315                 320
Pro Gly Phe Thr Gly Ser Asp Ser Phe Arg Lys Val Arg Met His Val
                325                 330                 335
Tyr Asn Ile Asn Lys Ile Thr Arg Ile Tyr Asn Val Val Gly Thr Ile
            340                 345                 350
Arg Gly Ser Val Glu Pro Asp Arg Tyr Val Ile Leu Gly Gly His Arg
        355                 360                 365
Asp Ser Trp Val Phe Gly Ala Ile Asp Pro Thr Ser Gly Val Ala Val
    370                 375                 380
Leu Gln Glu Ile Ala Arg Ser Phe Gly Lys Leu Met Ser Lys Gly Trp
385                 390                 395                 400
Arg Pro Arg Arg Thr Ile Ile Phe Ala Ser Trp Asp Ala Glu Glu Phe
                405                 410                 415
Gly Leu Leu Gly Ser Thr Glu Trp Ala Glu Glu Asn Val Lys Ile Leu
            420                 425                 430
Gln Glu Arg Ser Ile Ala Tyr Ile Asn Ser Asp Ser Ser Ile Glu Gly
        435                 440                 445
Asn Tyr Thr Leu Arg Val Asp Cys Thr Pro Leu Leu Tyr Gln Leu Val
    450                 455                 460
Tyr Lys Leu Thr Lys Glu Ile Pro Ser Pro Asp Asp Gly Phe Glu Ser
465                 470                 475                 480
Lys Phe Leu Tyr Glu Ser Trp Val Glu Lys Asp Pro Ser Pro Glu Asn
                485                 490                 495
Lys Asn Leu Pro Arg Ile Asn Lys Leu Gly Ser Gly Ser Asp Phe Glu
            500                 505                 510
```

Ala Tyr Phe Gln Arg Leu Gly Ile Ala Ser Gly Arg Ala Arg Tyr Thr
515 520 525
Lys Asn Lys Lys Thr Asp Lys Tyr Ser Ser Tyr Pro Val Tyr His Thr
530 535 540
Ile Tyr Glu Thr Phe Glu Leu Val Glu Lys Phe Tyr Asp Pro Thr Phe
545 550 555 560
Lys Lys Gln Leu Ser Val Ala Gln Leu Arg Gly Ala Leu Val Tyr Glu
565 570 575
Leu Val Asp Ser Lys Ile Ile Pro Phe Asn Ile Gln Asp Tyr Ala Glu
580 585 590
Ala Leu Lys Asn Tyr Ala Ala Ser Ile Tyr Asn Leu Ser Lys Lys His
595 600 605
Asp Gln Gln Leu Thr Asp His Gly Val Ser Phe Asp Ser Leu Phe Ser
610 615 620
Ala Val Lys Asn Phe Ser Glu Ala Ala Ser Asp Phe His Lys Arg Leu
625 630 635 640
Ile Gln Val Asp Leu Asn Asn Pro Ile Ala Val Arg Met Met Asn Asp
645 650 655
Gln Leu Met Leu Leu Glu Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro
660 665 670
Gly Lys Leu Phe Tyr Arg His Ile Ile Phe Ala Pro Ser Ser His Asn
675 680 685
Lys Tyr Ala Gly Glu Ser Phe Pro Gly Ile Tyr Asp Ala Ile Phe Asp
690 695 700
Ile Glu Asn Lys Ala Asn Ser Arg Leu Ala Trp Lys Glu Val Lys Lys
705 710 715 720
His Ile Ser Ile Ala Ala Phe Thr Ile Gln Ala Ala Ala Gly Thr Leu
725 730 735
Lys Glu Val Leu *
740

<210> 1534
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1534
Met Leu Ile Leu Leu His Ile Leu Lys Asn Ile Lys Leu Tyr Leu Val
1 5 10 15
Asn Met Leu Lys Thr Lys Leu Cys Phe Tyr Lys Asp Arg Gly Ser Pro
20 25 30
Glu Glu Gly Ile Asp Lys Glu Glu Met Lys Leu Gly Gly Arg Lys Trp
35 40 45
Thr *
49

<210> 1535
<211> 973
<212> PRT
<213> Homo sapiens

<400> 1535
Met Val Lys Ser Lys Trp Gly Leu Ala Leu Ala Ala Val Val Thr Val

```
1               5                   10                  15
Leu Ser Ser Leu Leu Met Ser Val Gly Leu Cys Thr Leu Phe Gly Leu
            20                  25                  30
Thr Pro Thr Leu Asn Gly Gly Glu Ile Phe Pro Tyr Leu Val Val Val
        35                  40                  45
Ile Gly Leu Glu Asn Val Leu Val Leu Thr Lys Ser Val Val Ser Thr
    50                  55                  60
Pro Val Asp Leu Glu Val Lys Leu Arg Ile Ala Gln Gly Leu Ser Ser
65                  70                  75                  80
Glu Ser Trp Ser Ile Met Lys Asn Met Ala Thr Glu Leu Gly Ile Ile
                85                  90                  95
Leu Ile Gly Tyr Phe Thr Leu Val Pro Ala Ile Gln Glu Phe Cys Leu
            100                 105                 110
Phe Ala Val Val Gly Leu Val Ser Asp Phe Phe Leu Gln Met Leu Phe
        115                 120                 125
Phe Thr Thr Val Leu Ser Ile Asp Ile Arg Arg Met Glu Leu Ala Asp
    130                 135                 140
Leu Asn Lys Arg Leu Pro Pro Glu Ala Cys Leu Pro Ser Ala Lys Pro
145                 150                 155                 160
Val Gly Gln Pro Thr Arg Tyr Glu Arg Gln Leu Ala Val Arg Pro Ser
                165                 170                 175
Thr Pro His Thr Ile Thr Leu Gln Pro Ser Ser Phe Arg Asn Leu Arg
            180                 185                 190
Leu Pro Lys Arg Leu Arg Val Val Tyr Phe Leu Ala Arg Thr Arg Leu
        195                 200                 205
Ala Gln Arg Leu Ile Met Ala Gly Thr Val Val Trp Ile Gly Ile Leu
    210                 215                 220
Val Tyr Thr Asp Pro Ala Gly Leu Arg Asn Tyr Leu Ala Ala Gln Val
225                 230                 235                 240
Thr Glu Gln Ser Pro Leu Gly Glu Gly Ala Leu Ala Pro Met Pro Val
                245                 250                 255
Pro Ser Gly Met Leu Pro Pro Ser His Pro Asp Pro Ala Phe Ser Ile
            260                 265                 270
Phe Pro Pro Asp Ala Pro Lys Leu Pro Glu Asn Gln Thr Ser Pro Gly
        275                 280                 285
Glu Ser Pro Glu Arg Gly Gly Pro Ala Glu Val Val His Asp Ser Pro
    290                 295                 300
Val Pro Glu Val Thr Trp Gly Pro Glu Asp Glu Glu Leu Trp Arg Lys
305                 310                 315                 320
Leu Ser Phe Arg His Trp Pro Thr Leu Phe Ser Tyr Tyr Asn Ile Thr
                325                 330                 335
Leu Ala Lys Arg Tyr Ile Ser Leu Leu Pro Val Ile Pro Val Thr Leu
            340                 345                 350
Arg Leu Asn Pro Arg Glu Ala Leu Glu Gly Arg His Pro Gln Asp Gly
        355                 360                 365
Arg Ser Ala Trp Pro Pro Pro Gly Pro Ile Pro Ala Gly His Trp Glu
    370                 375                 380
Ala Gly Pro Lys Gly Pro Gly Gly Val Gln Ala His Gly Asp Val Thr
385                 390                 395                 400
Leu Tyr Lys Val Ala Ala Leu Gly Leu Ala Thr Gly Ile Val Leu Val
                405                 410                 415
Leu Leu Leu Leu Cys Leu Tyr Arg Val Leu Cys Pro Arg Asn Tyr Gly
            420                 425                 430
Gln Leu Gly Gly Gly Pro Gly Arg Arg Arg Arg Gly Glu Leu Pro Cys
        435                 440                 445
Asp Asp Tyr Gly Tyr Ala Pro Pro Glu Thr Glu Ile Val Pro Leu Val
    450                 455                 460
Leu Arg Gly His Leu Met Asp Ile Glu Cys Leu Ala Ser Asp Gly Met
465                 470                 475                 480
```

```
Leu Leu Val Ser Cys Cys Leu Ala Gly His Val Cys Val Trp Asp Ala
                485                 490                 495
Gln Thr Gly Asp Cys Leu Thr Arg Ile Pro Arg Pro Gly Arg Gln Arg
            500                 505                 510
Arg Asp Ser Gly Val Gly Ser Gly Leu Glu Ala Gln Glu Ser Trp Glu
        515                 520                 525
Arg Leu Ser Asp Gly Gly Lys Ala Gly Pro Glu Glu Pro Gly Asp Ser
    530                 535                 540
Pro Pro Leu Arg His Arg Pro Arg Gly Pro Pro Pro Pro Ser Leu Phe
545                 550                 555                 560
Gly Asp Gln Pro Asp Leu Thr Cys Leu Ile Asp Thr Asn Phe Ser Ala
                565                 570                 575
Gln Pro Arg Ser Ser Gln Pro Thr Gln Pro Glu Pro Arg His Arg Ala
            580                 585                 590
Val Cys Gly Arg Ser Arg Asp Ser Pro Gly Tyr Asp Phe Ser Cys Leu
        595                 600                 605
Val Gln Arg Val Tyr Gln Glu Glu Gly Leu Ala Ala Val Cys Thr Pro
    610                 615                 620
Ala Leu Arg Pro Pro Ser Pro Gly Pro Val Leu Ser Gln Ala Pro Glu
625                 630                 635                 640
Asp Glu Gly Gly Ser Pro Glu Lys Gly Ser Pro Ser Leu Ala Trp Ala
                645                 650                 655
Pro Ser Ala Glu Gly Ser Ile Trp Ser Leu Glu Leu Gln Gly Asn Leu
            660                 665                 670
Ile Val Val Gly Arg Ser Ser Gly Arg Leu Glu Val Trp Asp Ala Ile
        675                 680                 685
Glu Gly Val Leu Cys Cys Ser Ser Glu Glu Val Ser Ser Gly Ile Thr
    690                 695                 700
Ala Leu Val Phe Leu Asp Lys Arg Ile Val Ala Ala Arg Leu Asn Gly
705                 710                 715                 720
Ser Leu Asp Phe Phe Ser Leu Glu Thr His Thr Ala Leu Ser Pro Leu
                725                 730                 735
Gln Phe Arg Gly Thr Pro Gly Arg Gly Ser Ser Pro Ala Ser Pro Val
            740                 745                 750
Tyr Ser Ser Ser Asp Thr Val Ala Cys His Leu Thr His Thr Val Pro
        755                 760                 765
Cys Ala His Gln Lys Pro Ile Thr Ala Leu Lys Ala Ala Ala Gly Arg
    770                 775                 780
Leu Val Thr Gly Ser Gln Asp His Thr Leu Arg Val Phe Arg Leu Glu
785                 790                 795                 800
Asp Ser Cys Cys Leu Phe Thr Leu Gln Gly His Ser Gly Ala Ile Thr
                805                 810                 815
Thr Val Tyr Ile Asp Gln Thr Met Val Leu Ala Ser Gly Gly Gln Asp
            820                 825                 830
Gly Ala Ile Cys Leu Trp Asp Val Leu Thr Gly Ser Arg Val Ser His
        835                 840                 845
Val Phe Ala His Arg Gly Asp Val Thr Ser Leu Thr Cys Thr Thr Ser
    850                 855                 860
Cys Val Ile Ser Ser Gly Leu Asp Asp Leu Ile Ser Ile Trp Asp Arg
865                 870                 875                 880
Ser Thr Gly Ile Lys Phe Tyr Ser Ile Gln Gln Asp Leu Gly Cys Gly
                885                 890                 895
Ala Ser Leu Gly Val Ile Ser Asp Asn Leu Leu Val Thr Gly Gly Gln
            900                 905                 910
Gly Cys Val Ser Phe Trp Asp Leu Asn Tyr Gly Asp Leu Leu Gln Thr
        915                 920                 925
Val Tyr Leu Gly Lys Asn Ser Glu Ala Gln Pro Ala Arg Gln Ile Leu
    930                 935                 940
Val Leu Asp Asn Ala Ala Ile Val Cys Asn Phe Gly Ser Glu Leu Ser
```

945 950 955 960
Leu Val Tyr Val Pro Ser Val Leu Glu Lys Leu Asp *
965 970 972

<210> 1536
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1536
Met Cys Leu Leu Lys Ala Ala Pro Phe Phe Phe Phe Tyr Val Pro Gln
1 5 10 15
Val Gly Lys Gly Asn Pro Arg Pro Pro Arg Gly Cys Ser Ala Phe His
20 25 30
Pro Pro Thr His Leu Arg Pro Gly Ser Cys Ser Val Ala Gln Ala Gly
35 40 45
Val Gln Trp Arg Ser Leu Gly Ser Ile Ala Ala Ser Val Ser Trp Val
50 55 60
Gln Ala Ile Leu Leu Pro Gln Pro Leu Glu *
65 70 74

<210> 1537
<211> 96
<212> PRT
<213> Homo sapiens

<400> 1537
Met Asp Leu Gly Arg Val Phe Ile Thr Leu Ile Leu Asn Leu Leu Arg
1 5 10 15
Glu Thr Ile Phe Lys Arg Asp Gln Ser Pro Glu Pro Lys Val Pro Glu
20 25 30
Gln Ser Val Lys Glu Asp Arg Lys Leu Cys Glu Arg Pro Leu Ala Ser
35 40 45
Ser Pro Pro Arg Leu Tyr Glu Asp Asp Glu Thr Pro Gly Ala Leu Ser
50 55 60
Gly Leu Thr Asn Met Ala Val Ile Gln Ile Asp Gly His Met Ser Gly
65 70 75 80
Gln Met Val Lys His Leu Met Asn Ser Met Met Lys Leu Cys Val Met
85 90 95 96

<210> 1538
<211> 318
<212> PRT
<213> Homo sapiens

<400> 1538
Met Val Met Arg Pro Leu Trp Ser Leu Leu Leu Trp Glu Ala Leu Leu
1 5 10 15

Pro Ile Thr Val Thr Gly Ala Gln Val Leu Ser Lys Val Gly Gly Ser
20 25 30
Val Leu Leu Val Ala Ala Arg Pro Pro Gly Phe Gln Val Arg Glu Ala
35 40 45
Ile Trp Arg Ser Leu Trp Pro Ser Glu Glu Leu Leu Ala Thr Phe Phe
50 55 60
Arg Gly Ser Leu Glu Thr Leu Tyr His Ser Arg Phe Leu Gly Arg Ala
65 70 75 80
Gln Leu His Ser Asn Leu Ser Leu Glu Leu Gly Pro Leu Glu Ser Gly
85 90 95
Asp Ser Gly Asn Phe Ser Val Leu Met Val Asp Thr Arg Gly Gln Pro
100 105 110
Trp Thr Gln Thr Leu Gln Leu Lys Val Tyr Asp Ala Val Pro Arg Pro
115 120 125
Val Val Gln Val Phe Ile Ala Val Glu Arg Asp Ala Gln Pro Ser Lys
130 135 140
Thr Cys Gln Val Phe Leu Ser Cys Trp Ala Pro Asn Ile Ser Glu Ile
145 150 155 160
Thr Tyr Ser Trp Arg Arg Glu Thr Thr Met Asp Phe Gly Met Glu Pro
165 170 175
His Ser Leu Phe Thr Asp Gly Gln Val Leu Ser Ile Ser Leu Gly Pro
180 185 190
Gly Asp Arg Asp Val Ala Tyr Ser Cys Ile Val Ser Asn Pro Val Ser
195 200 205
Trp Asp Leu Ala Thr Val Thr Pro Trp Asp Ser Cys His His Glu Ala
210 215 220
Ala Pro Gly Lys Ala Ser Tyr Lys Asp Val Leu Leu Val Val Val Pro
225 230 235 240
Val Ser Leu Leu Leu Met Leu Val Thr Leu Phe Ser Ala Trp His Trp
245 250 255
Cys Pro Cys Ser Gly Pro His Leu Arg Ser Lys Gln Leu Trp Met Arg
260 265 270
Trp Asp Leu Gln Leu Ser Leu His Lys Val Thr Leu Ser Asn Leu Ile
275 280 285
Ser Thr Val Val Cys Ser Val Val His Gln Gly Leu Val Glu Gln Ile
290 295 300
His Thr Ala Leu Ile Lys Phe Pro Ser Leu Met Lys Lys Lys
305 310 315 318

<210> 1539
<211> 157
<212> PRT
<213> Homo sapiens

<400> 1539
Met Ile Leu Gln Val Ser Gly Gly Pro Trp Thr Val Ala Leu Thr Ala
1 5 10 15
Leu Leu Met Val Leu Leu Ile Ser Val Val Gln Ser Arg Ala Thr Pro
20 25 30
Glu Asn Ser Val Tyr Gln Glu Arg Gln Glu Cys Tyr Ala Phe Asn Gly
35 40 45
Thr Gln Arg Val Val Asp Gly Leu Ile Tyr Asn Arg Glu Glu Tyr Val
50 55 60
His Phe Asp Ser Ala Val Gly Glu Phe Leu Ala Val Met Glu Leu Gly
65 70 75 80
Arg Pro Ile Gly Glu Tyr Phe Asn Ser Gln Lys Asp Phe Met Glu Arg

85 90 95
Lys Arg Ala Glu Val Asp Lys Val Cys Arg His Lys Tyr Glu Leu Met
100 105 110
Glu Pro Leu Ile Arg Gln Arg Arg Gly Asp Val Thr Ile Thr Ala Val
115 120 125
Arg Gly Cys Trp Thr Thr Ile Leu Ser Gly Tyr Phe Leu Leu Lys Arg
130 135 140
Gly Val Val Ser Gly Gly Cys Ser Trp Gly Ser Ser *
145 150 155 156

<210> 1540
<211> 135
<212> PRT
<213> Homo sapiens

<400> 1540
Met Gly Ser Ser Phe Ile Leu Ala Leu Leu Leu Ala Val Leu Gln Gly
1 5 10 15
Leu Ser Ala Gly Val Leu Leu Glu Gln Ser Arg Ala Glu Val Lys Lys
20 25 30
Pro Gly Glu Ser Leu Lys Ile Ser Cys Lys Ala Ser Gly Tyr Arg Phe
35 40 45
Thr Ser Ala Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu
50 55 60
Glu Trp Met Gly Thr Ile Tyr Pro Ala Asp Ser Glu Val Arg Tyr Ser
65 70 75 80
Pro Ser Leu Gln Gly Gln Val Thr Leu Ser Val Asp Glu Ser Ile Ser
85 90 95
Thr Ala Tyr Leu Gln Trp Asn Ser Leu Arg Ala Ser Asp Thr Ala Thr
100 105 110
Tyr Tyr Cys Ala Arg Gln Ile Ile Gly Ala Leu Pro Thr Asp Pro Phe
115 120 125
Asp Leu Leu Gly Gln Gly Thr
130 135

<210> 1541
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1541
Met Cys Val Thr Cys Val Val Cys Met Trp Cys Met Cys Gly Val Cys
1 5 10 15
Ala Met Tyr Val Ala Cys Val Met His Val Val Cys Glu Val Tyr Val
20 25 30
Trp Tyr Val Cys Asp Val Cys Ala Phe Gly His Thr Gly Val Val Ile
35 40 45
Ala Leu Thr Trp Thr Pro Pro Gln Arg Val Ile Arg Lys Gly Gln Val
50 55 60
Leu Arg Leu Ala Cys Ser Gln *
65 70 71

<210> 1542
<211> 369
<212> PRT
<213> Homo sapiens

<400> 1542
Met Ala Pro Arg Thr Leu Val Leu Leu Leu Ser Gly Ala Leu Ala Leu
1 5 10 15
Thr Gln Thr Trp Ala Gly Ser His Ser Met Arg Tyr Phe Phe Thr Ser
20 25 30
Val Ser Arg Pro Gly Arg Gly Glu Pro Arg Phe Ile Ala Val Gly Tyr
35 40 45
Val Asp Asp Thr Gln Phe Val Arg Phe Asp Ser Asp Ala Ala Ser Gln
50 55 60
Arg Met Glu Pro Arg Ala Pro Trp Ile Glu Gln Glu Gly Pro Glu Tyr
65 70 75 80
Trp Asp Gly Glu Thr Arg Lys Val Lys Ala His Ser Gln Thr His Arg
85 90 95
Val Asp Leu Gly Thr Leu Arg Gly Tyr Tyr Asn Gln Ser Glu Ala Gly
100 105 110
Ser His Thr Val Gln Arg Met Tyr Gly Cys Asp Val Gly Ser Asp Trp
115 120 125
Arg Phe Leu Arg Gly Tyr His Gln Tyr Ala Tyr Asp Gly Lys Asp Tyr
130 135 140
Ile Ala Leu Lys Glu Asp Leu Arg Ser Trp Thr Ala Ala Asp Met Ala
145 150 155 160
Ala Gln Thr Thr Lys His Lys Trp Glu Ala Ala His Val Ala Glu Gln
165 170 175
Leu Arg Ala Tyr Leu Glu Gly Thr Cys Val Glu Trp Leu Arg Arg Tyr
180 185 190
Leu Glu Asn Gly Lys Glu Thr Leu Gln Arg Thr Asp Ala Pro Lys Thr
195 200 205
His Met Thr His His Pro Ile Ser Asp His Glu Ala Thr Leu Arg Cys
210 215 220
Trp Ala Leu Ser Phe Tyr Pro Ala Glu Ile Thr Leu Thr Trp Gln Arg
225 230 235 240
Asp Gly Glu Asp Gln Thr Gln Asp Thr Glu Leu Val Glu Thr Arg Pro
245 250 255
Ala Gly Asp Gly Thr Phe Gln Lys Trp Ala Ala Val Val Val Pro Ser
260 265 270
Gly Gln Glu Gln Arg Tyr Thr Cys His Val Gln His Glu Gly Leu Pro
275 280 285
Lys Pro Leu Thr Leu Arg Trp Glu Pro Ser Ser Gln Pro Thr Ile Pro
290 295 300
Ile Val Gly Ile Ile Ala Gly Leu Val Leu Phe Gly Ala Val Ile Thr
305 310 315 320
Gly Ala Val Val Ala Ala Val Met Trp Arg Arg Lys Ser Ser Asp Arg
325 330 335
Lys Gly Val Lys Asp Arg Lys Gly Gly Ser Tyr Ser Gln Ala Ala Ser
340 345 350
Ser Asp Ser Ala Gln Gly Ser Asp Val Ser Leu Thr Ala Cys Lys Val
355 360 365 368
*

<210> 1543
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1543
Met Arg Ser Leu Trp Lys Ala Asn Arg Ala Asp Leu Leu Ile Trp Leu
1 5 10 15
Val Thr Phe Thr Ala Thr Ile Leu Leu Asn Leu Asp Leu Gly Leu Glu
20 25 30
Asp Ala Val Ile Phe Ser Leu Leu Leu Glu Glu Val Arg Thr Gln Met
35 40 45 48
*

<210> 1544
<211> 121
<212> PRT
<213> Homo sapiens

<400> 1544
Met Lys Ile Phe Lys Cys Tyr Phe Lys His Thr Leu Gln Gln Lys Val
1 5 10 15
Phe Ile Leu Phe Leu Thr Leu Trp Leu Leu Ser Leu Leu Lys Leu Leu
20 25 30
Asn Val Arg Arg Leu Phe Pro Gln Lys Asp Ile Tyr Leu Val Glu Tyr
35 40 45
Ser Leu Ser Thr Ser Pro Phe Val Arg Asn Arg Tyr Thr His Val Lys
50 55 60
Asp Glu Val Arg Tyr Glu Val Asn Cys Ser Gly Ile Tyr Glu Gln Glu
65 70 75 80
Pro Leu Glu Ile Gly Lys Ser Leu Glu Ile Arg Arg Arg Asp Ile Ile
85 90 95
Asp Leu Glu Asp Asp Asp Val Val Ala Met Thr Ser Asp Cys Asp Ile
100 105 110
Tyr Gln Thr Leu Lys Gly Tyr Ala *
115 120

<210> 1545
<211> 70
<212> PRT
<213> Homo sapiens

<400> 1545
Met Phe Leu Leu Lys Trp Pro Leu Trp Val Leu Gln Tyr Val Val Cys
1 5 10 15
Ser Leu Lys Asp Lys Ile His Lys Phe Phe Tyr Ile Glu Arg Val Val
20 25 30
Gly Glu Leu Arg Val Leu Pro Gln Gly Trp Met Val Ala Leu Ile Leu
35 40 45
Arg Lys Asp Phe Val Leu Pro Ser Pro Ser Asp Val Val Asn Ala Ser
50 55 60

```
Gln Pro Gly Gln Val  *
 65               69



     <210> 1546
     <211> 58
     <212> PRT
     <213> Homo sapiens


     <400> 1546
Met Tyr Gly Met Leu Glu Trp Pro Ile Ser Met Tyr Phe Val Ala Phe
  1               5                  10                  15
Leu His Cys Phe Leu Cys Ser Gly Gly Asn Leu Gly Asp Ser Phe Gln
             20                  25                  30
Ala Leu Pro Glu Leu Cys Ala Asn Cys Ser Ser Ser Pro Arg Val Leu
         35                  40                  45
Cys Cys Val Val Met Ser Pro Leu Pro  *
     50                  55      57



     <210> 1547
     <211> 65
     <212> PRT
     <213> Homo sapiens


     <400> 1547
Met Trp Leu His Glu Asn Leu Gln Phe Leu Leu Gln Leu Ile Phe His
  1               5                  10                  15
Phe Tyr Trp Thr Val Pro Pro Trp Arg Asp Trp Cys Lys Val Ile Gln
             20                  25                  30
Gln Ala Arg Asp Arg Pro Gly Pro Asn Pro Leu Leu Pro Leu Arg Met
         35                  40                  45
Gly Ala Trp His Leu Pro Gly His Asp Gly Leu Gly Arg Val Cys Thr
     50                  55                  60              64
 *



     <210> 1548
     <211> 78
     <212> PRT
     <213> Homo sapiens


     <400> 1548
Met Phe Ile Ile Phe Leu Ala Phe Ile Ala Leu Lys Arg Ser Lys Ser
  1               5                  10                  15
Val Ile Gly Ala Phe Leu Tyr Leu Ala Ser Ile Phe Leu Ala His Gly
             20                  25                  30
Val Ala Ala His Ile Val Phe Met Ser Ala Phe Tyr Gln Ala Cys Arg
         35                  40                  45
Thr Tyr Leu Trp Trp Ala Leu Cys Glu Asn Leu Arg Met Lys Ser Val
     50                  55                  60
Ser Cys Met Leu Leu Lys Gly Met Ala Cys Leu Leu Thr  *
```

65 70 75 77

<210> 1549
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1549
Met Leu Tyr Ile Glu Cys Lys Ser His Lys Leu Val Ala Pro Leu Ala
1 5 10 15
Val Phe Phe Ala Leu Phe Phe Leu Leu Ile Phe Phe Trp Val Ala Phe
20 25 30
Ser Tyr Pro Phe Glu Leu Leu Phe Leu Gln Leu Arg Ser Arg Gln Ala
35 40 45
Asp Ile Gly Val Gln *
50 53

<210> 1550
<211> 70
<212> PRT
<213> Homo sapiens

<400> 1550
Met Val Asn Thr Trp Leu Ala Ala Cys Cys Thr Val Val Thr Trp Phe
1 5 10 15
Pro Lys Met Ser Met Leu Pro Leu Pro Pro Ser Lys Pro Ser Ala Arg
20 25 30
Ser Ser Leu Trp Ile Gly Ala Pro Leu Ala Ser Arg Leu Ala Ser Thr
35 40 45
Thr Ser Leu Pro Leu Trp Cys Leu Val Glu Thr Trp Pro Arg Tyr Arg
50 55 60
Glu Leu Cys Ala Cys *
65 69

<210> 1551
<211> 224
<212> PRT
<213> Homo sapiens

<400> 1551
Met Arg Gln Ile Asn Lys Lys Gly Phe Trp Ser Tyr Gly Pro Val Ile
1 5 10 15
Leu Val Val Leu Val Val Ala Val Val Ala Ser Ser Val Asn Ser Tyr
20 25 30
Tyr Ser Ser Pro Ala Gln Gln Val Pro Lys Asn Pro Ala Leu Glu Ala
35 40 45
Phe Leu Ala Gln Phe Ser Gln Leu Glu Asp Lys Phe Pro Gly Gln Ser
50 55 60
Ser Phe Leu Trp Gln Arg Gly Arg Lys Phe Leu Gln Lys His Leu Asn
65 70 75 80

Ala Ser Asn Pro Thr Glu Pro Ala Thr Ile Ile Phe Thr Ala Ala Arg
85 90 95
Glu Gly Arg Glu Thr Leu Lys Cys Leu Ser His His Val Ala Asp Ala
100 105 110
Tyr Thr Ser Ser Gln Lys Val Ser Pro Ile Gln Ile Asp Gly Ala Gly
115 120 125
Arg Thr Trp Gln Asp Ser Asp Thr Val Lys Leu Leu Val Asp Leu Glu
130 135 140
Leu Ser Tyr Gly Phe Glu Asn Gly Gln Lys Ala Ala Val Val His His
145 150 155 160
Phe Glu Ser Phe Pro Ala Gly Ser Thr Leu Ile Phe Tyr Lys Tyr Cys
165 170 175
Asp His Glu Asn Ala Ala Phe Lys Asp Val Ala Leu Val Leu Thr Val
180 185 190
Leu Leu Glu Glu Glu Thr Leu Glu Ala Ser Val Gly Pro Arg Glu Thr
195 200 205
Glu Glu Lys Val Arg Asp Leu Leu Trp Ala Lys Phe Thr Asn Ser *
210 215 220 223

<210> 1552
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1552
Met Arg Gln Lys Phe Leu Lys Pro Leu Leu Ile Leu Leu His Arg Leu
1 5 10 15
Lys Leu Gly Ser Leu Tyr Thr Pro Ser Ser Val Ala Arg Tyr Asp Ser
20 25 30
Ser Val Asn Glu Asn Arg Ser Val Asn Ser Ser Ala Tyr Glu Glu Ala
35 40 45
Lys Glu Leu Met Leu Ser Met Asn *
50 55 56

<210> 1553
<211> 241
<212> PRT
<213> Homo sapiens

<400> 1553
Met Ser Cys Val Leu Gly Gly Val Ile Pro Leu Gly Leu Leu Phe Leu
1 5 10 15
Val Cys Gly Ser Gln Gly Tyr Leu Leu Pro Asn Val Thr Leu Leu Glu
20 25 30
Glu Leu Leu Ser Lys Tyr Gln His Asn Glu Ser His Ser Arg Val Arg
35 40 45
Arg Ala Ile Pro Arg Glu Asp Lys Glu Glu Ile Leu Met Leu His Asn
50 55 60
Lys Leu Arg Gly Gln Val Gln Pro Gln Ala Ser Asn Met Glu Tyr Met
65 70 75 80
Thr Trp Asp Asp Glu Leu Glu Lys Ser Ala Ala Ala Trp Ala Ser Gln
85 90 95
Cys Ile Trp Glu His Gly Pro Thr Ser Leu Leu Val Ser Ile Gly Gln

```
            100                     105                     110
Asn Leu Gly Ala His Trp Gly Arg Tyr Arg Ser Pro Gly Phe His Val
        115                     120                     125
Gln Ser Trp Tyr Asp Glu Val Lys Asp Tyr Thr Tyr Pro Tyr Pro Ser
    130                     135                     140
Glu Cys Asn Pro Trp Cys Pro Glu Arg Cys Ser Gly Pro Met Cys Thr
145                     150                     155                     160
His Tyr Thr Gln Ile Val Trp Ala Thr Thr Asn Lys Ile Gly Cys Ala
                165                     170                     175
Val Asn Thr Cys Arg Lys Met Thr Val Trp Gly Glu Val Trp Glu Asn
            180                     185                     190
Ala Val Tyr Phe Val Cys Asn Tyr Ser Pro Lys Gly Asn Trp Ile Gly
        195                     200                     205
Glu Ala Pro Tyr Lys Asn Gly Arg Pro Cys Ser Glu Cys Pro Pro Ser
    210                     215                     220
Tyr Gly Gly Ser Cys Arg Asn Asn Leu Cys Tyr Arg Glu Glu Thr Tyr
225                     230                     235                     240
Thr
241


     <210> 1554
     <211> 56
     <212> PRT
     <213> Homo sapiens


     <400> 1554
Met Leu Thr Ser Ser Gly Cys Glu Lys His Leu Ser Leu Ala Ser Val
  1               5                  10                  15
Ser Ser Leu Ser Leu Phe Cys Val Cys Cys Ser Ser Cys Gln Leu Leu
             20                  25                  30
Trp Glu Asn Glu Cys Glu Arg Gly Ser Gln Arg Gly Trp Pro Pro Gln
         35                  40                  45
Cys Lys Trp Gly Ser Ala Val  *
     50                  55


     <210> 1555
     <211> 64
     <212> PRT
     <213> Homo sapiens


     <400> 1555
Met Tyr Gly Trp Thr Met Thr Ser Thr Ile Ser Cys Val Phe Trp Ala
  1               5                  10                  15
Cys Pro Gln Arg Lys Lys Gly Leu Cys Lys Arg Glu Gly Val Gly Ser
             20                  25                  30
Ser Ile Leu Ile His Ser Leu Ala Ala Phe Val Met Phe Asp Cys Asn
         35                  40                  45
Leu Pro Leu Leu Val Arg Arg Val Arg Arg Ile His Tyr Pro Ala  *
     50                  55                  60              63


     <210> 1556
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<211> 71
<212> PRT
<213> Homo sapiens

<400> 1556
Met Ser Arg Pro Met Met Thr Ser Ala Ser Trp Thr Ser Val Trp Ser
1 5 10 15
Val Phe Val Met Ile Tyr Leu Tyr Phe Glu Arg Lys Tyr Val Leu Pro
20 25 30
Leu Leu Gly Val Val Phe Tyr Thr Ile Ile Ser Asn Asp Ala Phe Ala
35 40 45
Leu Glu Ser Leu Leu Ser Gly Ile Ser Thr Ser Ala Phe Phe Cys Lys
50 55 60
Glu Leu Met Cys Ile Leu *
65 70

<210> 1557
<211> 126
<212> PRT
<213> Homo sapiens

<400> 1557
Met Gln Thr His Leu Gly Ala Ser Cys Leu Ser Leu Val Ile Arg Ile
1 5 10 15
Ala Leu Leu Phe Leu Val Gln Arg Asp Gly His Leu His Ser Arg Arg
20 25 30
Glu Ile Tyr Ala Ile Phe Thr Lys Gly Ser Leu Cys Pro Ala Phe Lys
35 40 45
Trp Ala Arg Val Gly Arg Glu Leu Phe Leu His Leu Leu Leu Ser Asn
50 55 60
Cys His Gln Leu Lys Ile Ile Leu Ile Pro Lys Cys His Ile Leu Gly
65 70 75 80
Trp His Ile Leu Ile Pro Phe Thr Ser Lys Ile Trp Asp Ser Tyr Phe
85 90 95
Ile Val Gln Cys Phe Ser His Phe Thr Thr Leu Ala Asn Val Phe Met
100 105 110
Glu Glu Asp Asn Pro Val Ser Glu Leu Gln Val Phe Gln *
115 120 125

<210> 1558
<211> 135
<212> PRT
<213> Homo sapiens

<400> 1558
Met Lys Gly Ser Ile Phe Thr Leu Phe Leu Phe Ser Val Leu Phe Ala
1 5 10 15
Ile Ser Glu Val Arg Ser Lys Glu Ser Val Arg Leu Cys Gly Leu Glu
20 25 30
Tyr Ile Arg Thr Val Ile Tyr Ile Cys Ala Ser Ser Arg Trp Arg Arg
35 40 45
His Leu Glu Gly Ile Pro Gln Ala Gln Gln Ala Glu Thr Gly Asn Ser

50 55 60
Phe Gln Leu Pro His Lys Arg Glu Phe Ser Glu Glu Asn Pro Ala Gln
65 70 75 80
Asn Leu Pro Lys Val Asp Ala Ser Gly Glu Asp Arg Leu Trp Gly Gly
85 90 95
Gln Met Pro Thr Glu Glu Leu Trp Lys Ser Lys Lys His Ser Val Met
100 105 110
Ser Arg Gln Asp Leu Gln Thr Leu Cys Cys Thr Asp Gly Cys Ser Met
115 120 125
Thr Asp Leu Ser Ala Leu Cys
130 135

<210> 1559
<211> 203
<212> PRT
<213> Homo sapiens

<400> 1559
Met Glu Leu Trp Gly Ala Tyr Leu Leu Leu Cys Leu Phe Ser Leu Leu
1 5 10 15
Thr Gln Val Thr Thr Glu Pro Pro Thr Gln Lys Pro Lys Lys Ile Val
20 25 30
Asn Ala Lys Lys Asp Val Val Asn Thr Lys Met Phe Glu Glu Leu Lys
35 40 45
Ser Arg Leu Asp Thr Leu Ala Gln Glu Val Ala Leu Leu Lys Glu Gln
50 55 60
Gln Ala Leu Gln Thr Val Cys Leu Lys Gly Thr Lys Val His Met Lys
65 70 75 80
Cys Phe Leu Ala Phe Thr Gln Thr Lys Thr Phe His Glu Ala Ser Glu
85 90 95
Asp Cys Ile Ser Arg Gly Gly Thr Leu Ser Thr Pro Gln Thr Gly Ser
100 105 110
Glu Asn Asp Ala Leu Tyr Glu Tyr Leu Arg Gln Ser Val Gly Asn Glu
115 120 125
Ala Glu Ile Trp Leu Gly Leu Asn Asp Met Ala Ala Glu Gly Thr Trp
130 135 140
Val Asp Met Thr Gly Ala Arg Ile Ala Tyr Lys Asn Trp Glu Thr Glu
145 150 155 160
Ile Thr Ala Gln Pro Asp Gly Gly Lys Thr Glu Asn Cys Ala Val Leu
165 170 175
Ser Gly Ala Ala Asn Gly Lys Trp Phe Asp Lys Arg Cys Arg Asp Gln
180 185 190
Leu Pro Tyr Ile Cys Gln Phe Gly Ile Val *
195 200 202

<210> 1560
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1560
Met Met Gly Val Ser Gly Cys Met Val Leu Leu Ala Pro Leu Leu Ala
1 5 10 15

Arg Arg Ser Gln Ser Ser Leu Trp Lys Gln Phe Glu Lys Cys Ser Ala
20 25 30
Gly Pro Lys Leu Met Leu Ser Lys Phe Leu Pro Trp Gly Lys Leu Ala
35 40 45
Met Pro Ser Arg Met Ser Asn Phe Ser Pro *
50 55 58

<210> 1561
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1561
Met Lys Phe Ser Asn Val Leu Cys Thr Cys Leu Leu Ile Leu Gln Lys
1 5 10 15
Val Lys Leu Phe Tyr Lys Thr Val His Glu Asn Ser Ser Phe Leu Pro
20 25 30
Cys Phe Ser His Leu Ile Pro Ser Pro Gln Arg Asn Leu Ser Ser Ile
35 40 45
Phe *
49

<210> 1562
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1562
Met Leu Phe Ser Ala Val Lys Leu Tyr Cys Cys Gln Phe Trp His Leu
1 5 10 15
Ile Leu Asn Arg Val Pro Ser Pro Ser Leu Leu Tyr Ser Cys Gly Leu
20 25 30
Ser Thr Asn Val Leu Asn Thr Thr Val Cys Tyr Val Arg Asp Lys Lys
35 40 45 48
*

<210> 1563
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1563
Met Glu Arg Leu Arg Gly Lys Cys Leu Leu Ile Ile Ala Leu Met Thr
1 5 10 15
Pro Leu Cys Thr Thr Thr Ile Ser Ser Ser Cys Ile Glu Gly Ser Ala
20 25 30
Asn Phe Phe Cys Lys Glu Pro Gly Ser Asn Cys Val Phe Glu Ala Leu
35 40 45
Trp Ala Ile Trp Ser Val Gly Gln Leu Leu Ser Ser Ser Val Val Ala

```
     50                  55                  60
His Lys Gln Pro  *
 65         68


     <210> 1564
     <211> 53
     <212> PRT
     <213> Homo sapiens


     <400> 1564
Met Gln Arg Leu Gly Lys Ala Pro Gly Thr Trp Gln Ala Ile Ser Lys
  1               5                  10                  15
Cys Trp Leu Leu Leu Leu Leu Ser Leu Pro Phe Ser Gln Ser Ile Ile
             20                  25                  30
Ile Ser Leu Arg Ala Gly Thr Met Ser Tyr Leu Pro Leu Tyr Phe Pro
         35                  40                  45
Gln Tyr Phe Pro  *
     50      52


     <210> 1565
     <211> 236
     <212> PRT
     <213> Homo sapiens


     <400> 1565
Met Pro Arg Arg Gly Leu Ile Leu His Thr Arg Thr His Trp Leu Leu
  1               5                  10                  15
Leu Gly Leu Ala Leu Leu Cys Ser Leu Val Leu Phe Met Tyr Leu Leu
             20                  25                  30
Glu Cys Ala Pro Gln Thr Asp Gly Asn Ala Ser Leu Pro Gly Val Val
         35                  40                  45
Gly Glu Asn Tyr Gly Lys Glu Tyr Tyr Gln Ala Leu Leu Gln Glu Gln
     50                  55                  60
Glu Glu His Tyr Gln Thr Arg Ala Thr Ser Leu Lys Arg Gln Ile Ala
 65                  70                  75                  80
Gln Leu Lys Gln Glu Leu Gln Glu Met Ser Glu Lys Met Arg Ser Leu
                 85                  90                  95
Gln Glu Arg Arg Asn Val Gly Ala Asn Gly Ile Gly Tyr Gln Ser Asn
            100                 105                 110
Lys Glu Gln Ala Pro Ser Asp Leu Leu Glu Phe Leu His Ser Gln Ile
        115                 120                 125
Asp Lys Ala Glu Val Ser Ile Gly Ala Lys Leu Pro Ser Glu Tyr Gly
    130                 135                 140
Val Ile Pro Phe Glu Ser Phe Thr Leu Met Lys Val Phe Gln Leu Glu
145                 150                 155                 160
Met Gly Leu Thr Arg His Pro Glu Glu Lys Pro Val Arg Lys Asp Lys
                165                 170                 175
Arg Asp Glu Leu Val Glu Val Ile Glu Ala Gly Leu Glu Val Ile Asn
            180                 185                 190
Asn Pro Asp Glu Asp Asp Glu Gln Glu Asp Glu Glu Gly Pro Leu Gly
        195                 200                 205
Glu Lys Leu Ile Phe Asn Glu Asn Asp Phe Val Glu Gly Tyr Tyr Arg
    210                 215                 220
```

Thr Glu Arg Asp Lys Gly Thr Gln Tyr Glu Leu Phe
225 230 235 236

<210> 1566
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1566
Met Thr Ala Gly Ile Met Pro Leu Gly Leu Cys Pro Cys Ser Cys Leu
1 5 10 15
Cys Leu His Ser Arg Thr Gly Ala Phe Ser Ala Val His Trp Ser Pro
20 25 30
Val Glu Gly Thr Pro Asp Pro Ser Leu Arg Glu Val Ile Ser Lys Gly
35 40 45
Cys Phe Ile Thr Val Phe Pro Gln Asn Asp Pro Ile Asp Thr Val Phe
50 55 60
Ser Gln Cys Pro Leu Thr Phe Glu His Ile Arg Glu *
65 70 75 76

<210> 1567
<211> 104
<212> PRT
<213> Homo sapiens

<400> 1567
Met Leu Ile Gly Leu Leu Ala Trp Leu Gln Thr Val Pro Ala His Gly
1 5 10 15
Cys Gln Phe Leu Pro Ile Thr Ser Val Thr Ala Thr Val Tyr His Leu
20 25 30
Pro Val His Gln Leu Lys Gly Arg Ser Arg Val Gln Lys Asn Leu Thr
35 40 45
Leu Asp Asn Glu Gly Glu Gly Thr Trp Thr Thr Cys Leu Glu Phe Leu
50 55 60
Glu Ser Leu Ala Gly Trp Arg Leu Gly Trp Gly Val Ser Arg Gly Val
65 70 75 80
Arg Glu Trp Leu Cys Leu Gln Gln Val Ser Leu His Gln Thr Pro Gly
85 90 95
Leu Pro His Lys Gln Asp Leu *
100 103

<210> 1568
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1568
Met Val Val Asn Thr Met Ile Tyr Phe Phe Ile Phe Thr Tyr Thr Leu
1 5 10 15
Ala Lys Arg Ala Arg Val His Ile Asn Lys Asn Gly Asn Lys Ala Leu

```
            20                  25                  30
Ala Glu Lys Asn Met His Leu Thr Asn His Val Asn Ser  *
        35                  40                  45



     <210> 1569
     <211> 50
     <212> PRT
     <213> Homo sapiens


     <400> 1569
Met Leu Met Met Asp Thr Leu Trp Pro Ile Leu Leu Gln Thr Leu Lys
  1               5                  10                  15
Val Ile Ser Gln Val Gly His Ala Gly Pro Leu Ala Asn Met Ile His
            20                  25                  30
Asp Asn Pro Cys Ile Ile Ala Tyr Arg Ile Thr Leu Arg Leu Val Gly
        35                  40                  45
Pro  *
 49



     <210> 1570
     <211> 50
     <212> PRT
     <213> Homo sapiens


     <400> 1570
Met Val Gly Phe Asp Leu Leu Pro Leu Leu Phe Phe Pro Phe Phe Phe
  1               5                  10                  15
Pro Ser Leu Ile Phe Phe Pro Phe Phe Ser Ser Pro Ser Pro Ser Phe
            20                  25                  30
Gln Phe Leu Pro His Gln Glu Lys Ser Gln His Val Phe Pro Pro Asn
        35                  40                  45
Ala  *
 49



     <210> 1571
     <211> 50
     <212> PRT
     <213> Homo sapiens


     <400> 1571
Met Tyr Leu Trp Val Val Arg Trp Lys Trp Cys Leu Gln Lys Leu Gly
  1               5                  10                  15
Arg Arg Ile Leu Leu His Ser Leu His Asp Val Phe Ile Ala Asn Met
            20                  25                  30
Asp Asp Lys Gly Leu Cys Tyr Arg Gly Leu Arg Ala Pro Ser Phe Leu
        35                  40                  45
Leu  *
 49
```

```
<210> 1572
<211> 80
<212> PRT
<213> Homo sapiens


<400> 1572
Met Ser Ser Gly Arg Asn Phe Gly Phe Cys Phe Gln Trp Leu Pro Trp
 1               5                  10                  15
Ala Leu Val Ala Thr Trp Ala Ser Val Thr Val Leu Met Ser Ser His
            20                  25                  30
Ser Ser Ser Val Gly Ser Gly Leu Cys Pro Met Asp Phe Cys Ser Ser
        35                  40                  45
Ser Arg Arg Leu Phe Ser Arg Phe Ser Ser Ile Ser Phe Leu Leu Ala
    50                  55                  60
Ser Leu Leu Leu Ser Ser Ser Thr Lys Ser Val Ala Met Pro Thr  *
65                  70                  75                  79


<210> 1573
<211> 52
<212> PRT
<213> Homo sapiens


<400> 1573
Met Ile Asp Ile Val Arg Phe Ala Gly Leu Pro Ser Leu Leu Leu His
 1               5                  10                  15
Ala Leu Cys Leu Ile Ser Leu Thr Tyr Pro Ser Ser Phe Arg His Ser
            20                  25                  30
Ser Tyr Leu Ile Ser Pro Cys Ala Ser Phe Trp Ile Leu Tyr Leu Phe
        35                  40                  45
Arg Pro Val  *
    50  51


<210> 1574
<211> 200
<212> PRT
<213> Homo sapiens


<400> 1574
Met Arg Leu Ser Leu Pro Leu Leu Leu Leu Leu Leu Gly Ala Trp Ala
 1               5                  10                  15
Ile Pro Gly Gly Leu Gly Val Met Ala Pro Leu Thr Ala Thr Ala Pro
            20                  25                  30
Glu Val Asp Asp Glu Glu Met Tyr Ser Ala His Met Pro Ala His Leu
        35                  40                  45
Arg Cys Asp Ala Cys Arg Ala Val Ala Tyr Gln Glu Cys Gly Pro Lys
    50                  55                  60
Thr Leu Ala Lys Ala Glu Thr Lys Leu His Thr Ser Asn Ser Gly Gly
65                  70                  75                  80
Arg Arg Asp Val Ser Glu Leu Val Tyr Thr Asp Val Leu Asp Arg Ser
                85                  90                  95
Cys Ser Arg Asn Trp Gln Asp Tyr Gly Val Arg Glu Val Asp Gln Val
```

```
            100                 105                 110
Lys Arg Leu Thr Gly Pro Gly Leu Ser Glu Gly Pro Glu Pro Ser Ile
        115                 120                 125
Ser Val Met Val Thr Gly Gly Pro Trp His Thr Arg Leu Ser Arg Thr
    130                 135                 140
Cys Leu His Tyr Leu Gly Glu Phe Gly Glu Asp Gln Ile Tyr Glu Ala
145                 150                 155                 160
His Gln Gln Gly Arg Gly Ala Leu Glu Ala Leu Leu Cys Gly Gly Pro
                165                 170                 175
Pro Gly Gly Leu Leu Arg Glu Gly Val Ser His Lys Arg Arg Ala Leu
            180                 185                 190
Val Leu Asp Ser Thr Leu Leu  *
        195             199
```

<210> 1575
<211> 51
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(51)
<223> Xaa = any amino acid or nothing

<400> 1575

```
Met Leu Leu Gly Phe Gly Asn Val Phe Ile Leu Leu Ile Leu Xaa Thr
  1               5                  10                  15
Ala Ile Leu Trp Leu Lys Gly Ser Gln Arg Val Pro Glu Glu Pro Gly
            20                  25                  30
Glu Gln Pro Ile Tyr Met Asn Phe Ser Glu Pro Leu Thr Lys Asp Met
        35                  40                  45
Ala Thr  *
    50
```

<210> 1576
<211> 124
<212> PRT
<213> Homo sapiens

<400> 1576

```
Met Arg Ile Arg Leu Leu Cys Cys Val Ala Phe Ser Leu Leu Trp Ala
  1               5                  10                  15
Gly Pro Val Ile Ala Gly Ile Thr Gln Ala Pro Thr Ser Gln Ile Leu
            20                  25                  30
Ala Ala Gly Arg Arg Met Thr Leu Arg Cys Thr Gln Asp Met Arg His
        35                  40                  45
Asn Ala Met Tyr Trp Tyr Arg Gln Asp Leu Gly Leu Gly Leu Arg Leu
    50                  55                  60
Ile His Tyr Ser Asn Thr Ala Gly Thr Thr Gly Lys Gly Glu Val Pro
 65                  70                  75                  80
Asp Gly Tyr Ser Val Ser Arg Ala Asn Thr Asp Asp Phe Pro Leu Thr
                85                  90                  95
Leu Ala Ser Ala Val Pro Ser Gln Thr Ser Val Tyr Phe Cys Ala Ser
            100                 105                 110
```

Ser Asp Gly Ala Ser Gly Ser Pro His Thr Gly Glu
115 120 124

<210> 1577
<211> 860
<212> PRT
<213> Homo sapiens

<400> 1577
Met Ala Cys Arg Trp Ser Thr Lys Glu Ser Pro Arg Trp Arg Ser Ala
1 5 10 15
Leu Leu Leu Leu Phe Leu Ala Gly Val Tyr Gly Asn Gly Ala Leu Ala
20 25 30
Glu His Ser Glu Asn Val His Ile Ser Gly Val Ser Thr Ala Cys Gly
35 40 45
Glu Thr Pro Glu Gln Ile Arg Ala Pro Ser Gly Ile Ile Thr Ser Pro
50 55 60
Gly Trp Pro Ser Glu Tyr Pro Ala Lys Ile Asn Cys Ser Trp Phe Ile
65 70 75 80
Arg Ala Asn Pro Gly Glu Ile Ile Thr Ile Ser Phe Gln Asp Phe Asp
85 90 95
Ile Gln Gly Ser Arg Arg Cys Asn Leu Asp Trp Leu Thr Ile Glu Thr
100 105 110
Tyr Lys Asn Ile Glu Ser Tyr Arg Ala Cys Gly Ser Thr Ile Pro Pro
115 120 125
Pro Tyr Ile Ser Ser Gln Asp His Ile Trp Ile Arg Phe His Ser Asp
130 135 140
Asp Asn Ile Ser Arg Lys Gly Phe Arg Leu Ala Tyr Phe Ser Gly Lys
145 150 155 160
Ser Glu Glu Pro Asn Cys Ala Cys Asp Gln Phe Arg Cys Gly Asn Gly
165 170 175
Lys Cys Ile Pro Glu Ala Trp Lys Cys Asn Asn Met Asp Glu Cys Gly
180 185 190
Asp Arg Ser Asp Glu Glu Ile Cys Ala Lys Glu Ala Asn Pro Pro Thr
195 200 205
Ala Ala Ala Phe Gln Pro Cys Ala Tyr Asn Gln Phe Gln Cys Leu Ser
210 215 220
Arg Phe Thr Lys Val Tyr Thr Cys Leu Pro Glu Ser Leu Lys Cys Asp
225 230 235 240
Gly Asn Ile Asp Cys Leu Asp Leu Gly Asp Glu Ile Asp Cys Asp Val
245 250 255
Pro Thr Cys Gly Gln Trp Leu Lys Tyr Phe Tyr Gly Thr Phe Asn Ser
260 265 270
Pro Asn Tyr Pro Asp Phe Tyr Pro Pro Gly Ser Asn Cys Thr Trp Leu
275 280 285
Ile Asp Thr Gly Asp His Arg Lys Val Ile Leu Arg Phe Thr Asp Phe
290 295 300
Lys Leu Asp Gly Thr Gly Tyr Gly Asp Tyr Val Lys Ile Tyr Asp Gly
305 310 315 320
Leu Glu Glu Asn Pro His Lys Leu Leu Arg Val Leu Thr Ala Phe Asp
325 330 335
Ser His Ala Pro Leu Thr Val Val Ser Ser Ser Gly Gln Ile Arg Val
340 345 350
His Phe Cys Ala Asp Lys Val Asn Ala Ala Arg Gly Phe Asn Ala Thr
355 360 365
Tyr Gln Val Asp Gly Phe Cys Leu Pro Trp Glu Ile Pro Cys Gly Gly

370 375 380
Asn Trp Gly Cys Tyr Thr Glu Gln Gln Arg Cys Asp Gly Tyr Trp His
385 390 395 400
Cys Pro Asn Gly Arg Asp Glu Thr Asn Cys Thr Met Cys Gln Lys Glu
405 410 415
Glu Phe Pro Cys Ser Arg Asn Gly Val Cys Tyr Pro Arg Ser Asp Arg
420 425 430
Cys Asn Tyr Gln Asn His Cys Pro Asn Gly Ser Asp Glu Lys Asn Cys
435 440 445
Phe Phe Cys Gln Pro Gly Asn Phe His Cys Lys Asn Asn Arg Cys Val
450 455 460
Phe Glu Ser Trp Val Cys Asp Ser Gln Asp Asp Cys Gly Asp Gly Ser
465 470 475 480
Asp Glu Glu Asn Cys Pro Val Ile Val Pro Thr Arg Val Ile Thr Ala
485 490 495
Ala Val Ile Gly Ser Leu Ile Cys Gly Leu Leu Leu Val Ile Ala Leu
500 505 510
Gly Cys Thr Cys Lys Leu Tyr Ser Leu Arg Met Phe Glu Arg Arg Ser
515 520 525
Phe Glu Thr Gln Leu Ser Arg Val Glu Ala Glu Leu Leu Arg Arg Glu
530 535 540
Ala Pro Pro Ser Tyr Gly Gln Leu Ile Ala Gln Gly Leu Ile Pro Pro
545 550 555 560
Val Glu Asp Phe Pro Val Cys Ser Pro Asn Gln Ala Ser Val Leu Glu
565 570 575
Asn Leu Arg Leu Ala Val Arg Ser Gln Leu Gly Phe Thr Ser Val Arg
580 585 590
Leu Pro Met Ala Gly Arg Ser Ser Asn Ile Trp Asn Arg Ile Phe Asn
595 600 605
Phe Ala Arg Ser Arg His Ser Gly Ser Leu Ala Leu Val Ser Ala Asp
610 615 620
Gly Asp Glu Val Val Pro Ser Gln Ser Thr Ser Arg Glu Pro Glu Arg
625 630 635 640
Asn His Thr His Arg Ser Leu Phe Ser Val Glu Ser Asp Asp Thr Asp
645 650 655
Thr Glu Asn Glu Arg Arg Asp Met Ala Gly Ala Ser Gly Gly Val Ala
660 665 670
Ala Pro Leu Pro Gln Lys Val Pro Pro Thr Thr Ala Val Glu Ala Thr
675 680 685
Val Gly Ala Cys Ala Ser Ser Ser Thr Gln Ser Thr Arg Gly Gly His
690 695 700
Ala Asp Asn Gly Arg Asp Val Thr Ser Val Glu Pro Pro Ser Val Ser
705 710 715 720
Pro Ala Arg His Gln Leu Thr Ser Ala Leu Ser Arg Met Thr Gln Gly
725 730 735
Leu Arg Trp Val Arg Phe Thr Leu Gly Arg Ser Ser Ser Leu Ser Gln
740 745 750
Asn Gln Ser Pro Leu Arg Gln Leu Asp Asn Gly Val Ser Gly Arg Glu
755 760 765
Asp Asp Asp Asp Val Glu Met Leu Ile Pro Ile Ser Asp Gly Ser Ser
770 775 780
Asp Phe Asp Val Asn Asp Cys Ser Arg Pro Leu Leu Asp Leu Ala Ser
785 790 795 800
Asp Gln Gly Gln Gly Leu Arg Gln Pro Tyr Asn Ala Thr Asn Pro Gly
805 810 815
Val Arg Pro Ser Asn Arg Asp Gly Pro Cys Glu Arg Cys Gly Ile Val
820 825 830
His Thr Ala Gln Ile Pro Asp Thr Cys Leu Glu Val Thr Leu Lys Asn
835 840 845

Glu Thr Ser Asp Asp Glu Ala Leu Leu Leu Cys *
850 855 859

<210> 1578
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1578
Met Tyr Gly Met Leu Glu Trp Pro Ile Ser Met Tyr Phe Val Ala Phe
1 5 10 15
Leu His Cys Phe Leu Cys Ser Gly Gly Asn Leu Gly Asp Ser Phe Gln
20 25 30
Ala Leu Pro Glu Leu Cys Ala Asn Cys Ser Ser Ser Pro Arg Val Leu
35 40 45
Cys Cys Val Val Met Ser Pro Leu Pro *
50 55 57

<210> 1579
<211> 572
<212> PRT
<213> Homo sapiens

<400> 1579
Met Arg Arg Arg Ser Arg Met Leu Leu Cys Phe Ala Phe Leu Trp Val
1 5 10 15
Leu Gly Ile Ala Tyr Tyr Met Tyr Ser Gly Gly Gly Ser Ala Leu Ala
20 25 30
Gly Gly Ala Gly Gly Gly Ala Gly Arg Lys Glu Asp Trp Asn Glu Ile
35 40 45
Asp Pro Ile Lys Lys Lys Asp Leu His His Ser Asn Gly Glu Glu Lys
50 55 60
Ala Gln Ser Met Glu Thr Leu Pro Pro Gly Lys Val Arg Trp Pro Asp
65 70 75 80
Phe Asn Gln Glu Ala Tyr Val Gly Gly Thr Met Val Arg Ser Gly Gln
85 90 95
Asp Pro Tyr Ala Arg Asn Lys Phe Asn Gln Val Glu Ser Asp Lys Leu
100 105 110
Arg Met Asp Arg Ala Ile Pro Asp Thr Arg His Asp Gln Cys Gln Arg
115 120 125
Lys Gln Trp Arg Val Asp Leu Pro Ala Thr Ser Val Val Ile Thr Phe
130 135 140
His Asn Glu Ala Arg Ser Ala Leu Leu Arg Thr Val Val Ser Val Leu
145 150 155 160
Lys Lys Ser Pro Pro His Leu Ile Lys Glu Ile Ile Leu Val Asp Asp
165 170 175
Tyr Ser Asn Asp Pro Glu Asp Gly Ala Leu Leu Gly Lys Ile Glu Lys
180 185 190
Val Arg Val Leu Arg Asn Asp Arg Arg Glu Gly Leu Met Arg Ser Arg
195 200 205
Val Arg Gly Ala Asp Ala Ala Gln Ala Lys Val Leu Thr Phe Leu Asp
210 215 220
Ser His Cys Glu Cys Asn Glu His Trp Leu Glu Pro Leu Leu Glu Arg

225 230 235 240
Val Ala Glu Asp Arg Thr Arg Val Val Ser Pro Ile Ile Asp Val Ile
245 250 255
Asn Met Asp Asn Phe Gln Tyr Val Gly Ala Ser Ala Asp Leu Lys Gly
260 265 270
Gly Phe Asp Trp Asn Leu Val Phe Lys Trp Asp Tyr Met Thr Pro Glu
275 280 285
Gln Arg Arg Ser Arg Gln Gly Asn Pro Val Ala Pro Ile Lys Thr Pro
290 295 300
Met Ile Ala Gly Gly Leu Phe Val Met Asp Lys Phe Tyr Phe Glu Glu
305 310 315 320
Leu Gly Lys Tyr Asp Met Met Met Asp Val Trp Gly Gly Glu Asn Leu
325 330 335
Glu Ile Ser Phe Arg Val Trp Gln Cys Gly Gly Ser Leu Glu Ile Ile
340 345 350
Pro Cys Ser Arg Val Gly His Val Phe Arg Lys Gln His Pro Tyr Thr
355 360 365
Phe Pro Gly Gly Ser Gly Thr Val Phe Ala Arg Asn Thr Arg Arg Ala
370 375 380
Ala Glu Val Trp Met Asp Glu Tyr Lys Asn Phe Tyr Tyr Ala Ala Val
385 390 395 400
Pro Ser Ala Arg Asn Val Pro Tyr Gly Asn Ile Gln Ser Arg Leu Glu
405 410 415
Leu Arg Lys Lys Leu Ser Cys Lys Pro Phe Lys Trp Tyr Leu Glu Asn
420 425 430
Val Tyr Pro Glu Leu Arg Val Pro Asp His Gln Asp Ile Ala Phe Gly
435 440 445
Ala Leu Gln Gln Gly Thr Asn Cys Leu Asp Thr Leu Gly His Phe Ala
450 455 460
Asp Gly Val Val Gly Val Tyr Glu Cys His Asn Ala Gly Gly Asn Gln
465 470 475 480
Glu Trp Ala Leu Thr Lys Glu Lys Ser Val Lys His Met Asp Leu Cys
485 490 495
Leu Thr Val Val Asp Arg Ala Pro Gly Ser Leu Ile Lys Leu Gln Gly
500 505 510
Cys Arg Glu Asn Asp Ser Arg Gln Lys Trp Glu Gln Ile Glu Gly Asn
515 520 525
Ser Lys Leu Arg His Val Gly Ser Asn Leu Cys Leu Asp Ser Arg Thr
530 535 540
Ala Lys Ser Gly Gly Leu Ser Val Glu Val Cys Gly Pro Ala Leu Ser
545 550 555 560
Gln Gln Trp Lys Phe Thr Leu Asn Leu Gln Gln *
565 570 571

<210> 1580
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1580
Met Glu Arg Pro Leu Cys Ser His Leu Cys Ser Cys Leu Ala Met Leu
1 5 10 15
Ala Leu Leu Ser Pro Leu Ser Leu Ala Gln Tyr Asp Ser Trp Pro His
20 25 30
Tyr Pro Glu Tyr Phe Gln Gln Pro Ala Pro Glu Tyr His Gln Pro Gln
35 40 45

Ala Pro Ala Asn Val Ala Lys Ile Gln Leu Arg Leu Ala Gly Gln Lys
50 55 60
Arg Lys His Ser Glu Gly Pro Gly Gly Gly Val Leu *
65 70 75 76

<210> 1581
<211> 494
<212> PRT
<213> Homo sapiens

<400> 1581
Met Gly Ser Leu Gln Pro Leu Ala Thr Leu Tyr Leu Leu Gly Met Leu
1 5 10 15
Val Ala Ser Cys Leu Gly Arg Leu Ser Trp Tyr Asp Pro Asp Phe Gln
20 25 30
Ala Arg Leu Thr Arg Ser Asn Ser Lys Cys Gln Gly Gln Leu Glu Val
35 40 45
Tyr Leu Lys Asp Gly Trp His Met Val Cys Ser Gln Ser Trp Gly Arg
50 55 60
Ser Ser Lys Gln Trp Glu Asp Pro Ser Gln Ala Ser Lys Val Cys Gln
65 70 75 80
Arg Leu Asn Cys Gly Val Pro Leu Ser Leu Gly Pro Phe Leu Val Thr
85 90 95
Tyr Thr Pro Gln Ser Ser Ile Ile Cys Tyr Gly Gln Leu Gly Ser Phe
100 105 110
Ser Asn Cys Ser His Ser Arg Asn Asp Met Cys His Ser Leu Gly Leu
115 120 125
Thr Cys Leu Glu Pro Gln Lys Thr Thr Pro Pro Thr Thr Arg Pro Pro
130 135 140
Pro Thr Thr Thr Pro Glu Pro Thr Ala Pro Pro Arg Leu Gln Leu Val
145 150 155 160
Ala Gln Ser Gly Gly Gln His Cys Ala Gly Val Val Glu Phe Tyr Ser
165 170 175
Gly Ser Leu Gly Gly Thr Ile Ser Tyr Glu Ala Gln Asp Lys Thr Gln
180 185 190
Asp Leu Glu Asn Phe Leu Cys Asn Asn Leu Gln Cys Gly Ser Phe Leu
195 200 205
Lys His Leu Pro Glu Thr Glu Ala Gly Arg Ala Gln Asp Pro Gly Glu
210 215 220
Pro Arg Glu His Gln Pro Leu Pro Ile Gln Trp Lys Ile Gln Asn Ser
225 230 235 240
Ser Cys Thr Ser Leu Glu His Cys Phe Arg Lys Ile Lys Pro Gln Lys
245 250 255
Ser Gly Arg Val Leu Ala Leu Leu Cys Ser Gly Phe Gln Pro Lys Val
260 265 270
Gln Ser Arg Leu Val Gly Gly Ser Ser Ile Cys Glu Gly Thr Val Glu
275 280 285
Val Arg Gln Gly Ala Gln Trp Ala Ala Leu Cys Asp Ser Ser Ser Ala
290 295 300
Arg Ser Ser Leu Arg Trp Glu Glu Val Cys Arg Glu Gln Gln Cys Gly
305 310 315 320
Ser Val Asn Ser Tyr Arg Val Leu Asp Ala Gly Asp Pro Thr Ser Arg
325 330 335
Gly Leu Phe Cys Pro His Gln Lys Leu Ser Gln Cys His Glu Leu Trp
340 345 350
Glu Arg Asn Ser Tyr Cys Lys Lys Val Phe Val Thr Cys Gln Asp Pro

```
        355                 360                 365
Asn Pro Ala Gly Leu Ala Ala Gly Thr Val Ala Ser Ile Ile Leu Ala
    370                 375                 380
Leu Val Leu Leu Val Val Leu Leu Val Val Cys Gly Pro Leu Ala Tyr
385                 390                 395                 400
Lys Lys Leu Val Lys Lys Phe Arg Gln Lys Lys Gln Arg Gln Trp Ile
                405                 410                 415
Gly Pro Thr Gly Met Asn Gln Asn Met Ser Phe His Arg Asn His Thr
            420                 425                 430
Ala Thr Val Arg Ser His Ala Glu Asn Pro Thr Ala Ser His Val Asp
        435                 440                 445
Asn Glu Tyr Ser Gln Pro Pro Arg Asn Ser Arg Leu Ser Ala Tyr Pro
    450                 455                 460
Ala Leu Glu Gly Ala Leu His Arg Ser Ser Met Gln Pro Asp Asn Ser
465                 470                 475                 480
Ser Asp Ser Asp Tyr Asp Leu His Gly Ala Gln Arg Leu  *
                485                 490         493


     <210> 1582
     <211> 329
     <212> PRT
     <213> Homo sapiens


     <400> 1582
Met Gln Gly Leu Cys Ile Ser Val Ala Val Phe Leu His Tyr Phe Leu
 1               5                  10                  15
Leu Val Ser Phe Thr Trp Met Gly Leu Glu Ala Phe His Met Tyr Leu
            20                  25                  30
Ala Leu Val Lys Val Phe Asn Thr Tyr Ile Arg Lys Tyr Ile Leu Lys
        35                  40                  45
Phe Cys Ile Val Gly Trp Gly Val Pro Ala Val Val Val Thr Ile Ile
    50                  55                  60
Leu Thr Ile Ser Pro Asp Asn Tyr Gly Leu Gly Ser Tyr Gly Lys Phe
65                  70                  75                  80
Pro Asn Gly Ser Pro Asp Asp Phe Cys Trp Ile Asn Asn Asn Ala Val
                85                  90                  95
Phe Tyr Ile Thr Val Val Gly Tyr Phe Cys Val Ile Phe Leu Leu Asn
            100                 105                 110
Val Ser Met Phe Ile Val Val Leu Val Gln Leu Cys Arg Ile Lys Lys
        115                 120                 125
Lys Lys Gln Leu Gly Ala Gln Arg Lys Thr Ser Ile Gln Asp Leu Arg
    130                 135                 140
Ser Ile Ala Gly Leu Thr Phe Leu Leu Gly Ile Thr Trp Gly Phe Ala
145                 150                 155                 160
Phe Phe Ala Trp Gly Pro Val Asn Val Thr Phe Met Tyr Leu Phe Ala
                165                 170                 175
Ile Phe Asn Thr Leu Gln Gly Phe Phe Ile Phe Ile Phe Tyr Cys Val
            180                 185                 190
Ala Lys Glu Asn Val Arg Lys Gln Trp Arg Arg Tyr Leu Cys Cys Gly
        195                 200                 205
Lys Leu Arg Leu Ala Glu Asn Ser Asp Trp Ser Lys Thr Ala Thr Asn
    210                 215                 220
Gly Leu Lys Lys Gln Thr Val Asn Gln Gly Val Ser Ser Ser Ser Asn
225                 230                 235                 240
Ser Leu Gln Ser Ser Ser Asn Ser Thr Asn Ser Thr Thr Leu Leu Val
                245                 250                 255
```

```
Asn Asn Asp Cys Ser Val His Ala Ser Gly Asn Gly Asn Ala Ser Thr
            260                 265                 270
Glu Arg Asn Gly Val Ser Phe Ser Val Gln Asn Gly Asp Val Cys Leu
        275                 280                 285
His Asp Phe Thr Gly Lys Gln His Met Phe Asn Glu Lys Glu Asp Ser
    290                 295                 300
Cys Asn Gly Lys Gly Arg Met Ala Leu Arg Arg Thr Ser Lys Arg Gly
305                 310                 315                 320
Ser Leu His Phe Ile Glu Gln Met  *
                325         328


     &lt;210&gt; 1583
     &lt;211&gt; 49
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens


     &lt;400&gt; 1583
Met Gly Met Gly Arg Leu Leu Pro Met Ala Trp Val Leu Ala Gly Ile
 1               5                  10                  15
Pro Thr Gly Ala Gln Gln Ser Trp Arg Arg Pro Trp Ser Gly Ser Ala
            20                  25                  30
Pro Arg Cys Ala Ser Cys Gly Ser Ala Trp Arg Cys Cys Ala Val Arg
        35                  40                  45          48
 *


     &lt;210&gt; 1584
     &lt;211&gt; 671
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens


     &lt;400&gt; 1584
Met Ile Ala Ser Cys Leu Cys Tyr Leu Leu Leu Pro Ala Thr Arg Leu
 1               5                  10                  15
Phe Arg Ala Leu Ser Asp Ala Phe Phe Thr Cys Arg Lys Asn Val Leu
            20                  25                  30
Leu Ala Asn Ser Ser Ser Pro Gln Val Glu Gly Asp Phe Ala Met Ala
        35                  40                  45
Pro Arg Gly Pro Glu Gln Glu Glu Cys Glu Gly Leu Leu Gln Gln Trp
    50                  55                  60
Arg Glu Glu Gly Leu Ser Gln Val Leu Ser Thr Ala Ser Glu Gly Pro
65                  70                  75                  80
Leu Ile Asp Lys Gly Leu Ala Gln Ser Ser Leu Ala Leu Leu Met Asp
                85                  90                  95
Asn Pro Gly Glu Glu Asn Ala Ala Ser Glu Asp Arg Trp Ser Ser Arg
            100                 105                 110
Gln Leu Ser Asp Leu Arg Ala Ala Glu Asn Leu Asp Glu Pro Phe Pro
        115                 120                 125
Glu Met Leu Gly Glu Glu Pro Leu Leu Glu Val Glu Gly Val Glu Gly
    130                 135                 140
Ser Met Trp Ala Ala Ile Pro Met Gln Ser Glu Pro Gln Tyr Ala Asp
145                 150                 155                 160
Cys Ala Ala Leu Pro Val Gly Ala Leu Ala Thr Glu Gln Trp Glu Glu
```

```
                165                     170                     175
Asp Pro Ala Val Leu Ala Trp Ser Ile Ala Pro Glu Pro Val Pro Gln
            180                     185                     190
Glu Glu Ala Ser Ile Trp Pro Phe Glu Gly Leu Gly Gln Leu Gln Pro
        195                     200                     205
Pro Ala Val Glu Ile Pro Tyr His Glu Ile Leu Trp Arg Glu Trp Glu
    210                     215                     220
Asp Phe Ser Thr Gln Pro Asp Ala Gln Gly Leu Lys Ala Gly Asp Gly
225                     230                     235                     240
Pro Gln Phe Gln Phe Thr Leu Met Ser Tyr Asn Ile Leu Ala Gln Asp
                245                     250                     255
Leu Met Gln Gln Ser Ser Glu Leu Tyr Leu His Cys His Pro Asp Ile
            260                     265                     270
Leu Asn Trp Asn Tyr Arg Phe Val Asn Leu Met Gln Glu Phe Gln His
        275                     280                     285
Trp Asp Pro Asp Ile Leu Cys Leu Gln Glu Val Gln Glu Asp His Tyr
    290                     295                     300
Trp Glu Gln Leu Glu Pro Ser Leu Arg Met Met Gly Phe Thr Cys Phe
305                     310                     315                     320
Tyr Lys Arg Arg Thr Gly Cys Lys Thr Asp Gly Cys Ala Val Cys Tyr
                325                     330                     335
Lys Pro Thr Arg Phe Arg Leu Leu Cys Ala Ser Pro Val Glu Tyr Phe
            340                     345                     350
Arg Pro Gly Leu Glu Leu Leu Asn Arg Asp Asn Val Gly Leu Val Leu
        355                     360                     365
Leu Leu Gln Pro Leu Val Pro Glu Gly Leu Gly Gln Val Ser Val Ala
    370                     375                     380
Pro Leu Cys Val Ala Asn Thr His Ile Leu Tyr Asn Pro Arg Arg Gly
385                     390                     395                     400
Asp Val Lys Leu Ala Gln Met Ala Ile Leu Leu Ala Glu Val Asp Lys
                405                     410                     415
Val Ala Arg Leu Ser Asp Gly Ser His Cys Pro Ile Ile Leu Cys Gly
            420                     425                     430
Asp Leu Asn Ser Val Pro Asp Ser Pro Leu Tyr Asn Phe Ile Arg Asp
        435                     440                     445
Gly Glu Leu Gln Tyr His Gly Met Pro Ala Trp Lys Val Ser Gly Gln
    450                     455                     460
Glu Asp Phe Ser His Gln Leu Tyr Gln Arg Lys Leu Gln Ala Pro Leu
465                     470                     475                     480
Trp Pro Ser Ser Leu Gly Ile Thr Asp Cys Cys Gln Tyr Val Thr Ser
                485                     490                     495
Cys His Pro Lys Arg Ser Glu Arg Arg Lys Tyr Gly Arg Asp Phe Leu
            500                     505                     510
Leu Arg Phe Arg Phe Cys Ser Ile Ala Cys Gln Arg Pro Val Gly Leu
        515                     520                     525
Val Leu Met Glu Gly Val Thr Asp Thr Lys Pro Glu Arg Pro Ala Gly
    530                     535                     540
Trp Ala Glu Ser Val Leu Glu Glu Asp Ala Ser Glu Leu Glu Pro Ala
545                     550                     555                     560
Phe Ser Arg Thr Val Gly Thr Ile Gln His Cys Leu His Leu Thr Ser
                565                     570                     575
Val Tyr Thr His Phe Leu Pro Gln Arg Gly Arg Pro Glu Val Thr Thr
            580                     585                     590
Met Pro Leu Gly Leu Gly Met Thr Val Asp Tyr Ile Phe Phe Ser Ala
        595                     600                     605
Glu Ser Cys Glu Asn Gly Asn Arg Thr Asp His Arg Leu Tyr Arg Asp
    610                     615                     620
Gly Thr Leu Lys Leu Leu Gly Arg Leu Ser Leu Leu Ser Glu Glu Ile
625                     630                     635                     640
```

Leu Trp Ala Ala Asn Gly Leu Pro Asn Pro Phe Cys Ser Ser Asp His
645 650 655
Leu Cys Leu Leu Ala Ser Leu Gly Met Glu Val Thr Ala Pro *
660 665 670

<210> 1585
<211> 318
<212> PRT
<213> Homo sapiens

<400> 1585
Met Met Cys Leu Lys Ile Leu Arg Ile Ser Leu Ala Ile Leu Ala Gly
1 5 10 15
Trp Ala Leu Cys Ser Ala Asn Ser Glu Leu Gly Trp Thr Arg Lys Lys
20 25 30
Ser Leu Val Glu Arg Glu His Leu Asn Gln Val Leu Leu Glu Gly Glu
35 40 45
Arg Cys Trp Leu Gly Ala Lys Val Arg Arg Pro Arg Ala Ser Pro Gln
50 55 60
His His Leu Phe Gly Val Tyr Pro Ser Arg Ala Gly Asn Tyr Leu Arg
65 70 75 80
Pro Tyr Pro Val Gly Glu Gln Glu Ile His His Thr Gly Arg Ser Lys
85 90 95
Pro Asp Thr Glu Gly Asn Ala Val Ser Leu Val Pro Pro Asp Leu Thr
100 105 110
Glu Asn Pro Ala Gly Leu Arg Gly Ala Val Glu Glu Pro Ala Ala Pro
115 120 125
Trp Val Gly Asp Ser Pro Ile Gly Gln Ser Glu Leu Leu Gly Asp Asp
130 135 140
Asp Ala Tyr Leu Gly Asn Gln Arg Ser Lys Glu Ser Leu Gly Glu Ala
145 150 155 160
Gly Ile Gln Lys Gly Ser Ala Met Ala Ala Thr Thr Thr Thr Ala Ile
165 170 175
Phe Thr Thr Leu Asn Glu Pro Lys Pro Glu Thr Gln Arg Arg Gly Trp
180 185 190
Ala Lys Ser Arg Gln Arg Arg Gln Val Trp Lys Arg Arg Ala Glu Asp
195 200 205
Gly Gln Gly Asp Ser Gly Ile Ser Ser His Phe Gln Pro Trp Pro Lys
210 215 220
His Ser Leu Lys His Arg Val Lys Lys Ser Pro Pro Glu Glu Ser Asn
225 230 235 240
Gln Asn Gly Gly Glu Gly Ser Tyr Arg Glu Ala Glu Thr Phe Asn Ser
245 250 255
Gln Val Gly Leu Pro Ile Leu Tyr Phe Ser Gly Arg Arg Glu Arg Leu
260 265 270
Leu Leu Arg Pro Glu Val Leu Ala Glu Ile Pro Arg Glu Ala Phe Thr
275 280 285
Val Glu Ala Trp Val Lys Pro Glu Gly Gly Gln Asn Asn Pro Ala Ile
290 295 300
Ile Ala Gly Asn Thr Leu Leu Leu Gly Phe Leu Lys Ser *
305 310 315 317

<210> 1586
<211> 80

<212> PRT
<213> Homo sapiens

<400> 1586
Met Ile Ala Leu Thr Gln Leu Leu Thr Phe Ile Leu Ser Cys Asn Ser
1 5 10 15
Ser Leu Leu His Ile Phe Pro Phe Cys Glu Gln Val Leu Val Glu Asn
20 25 30
Gly Thr Lys Ala Gly His Ser Leu Leu Met Asp Ala Arg Asp Leu Val
35 40 45
Leu Lys Gly Lys Glu Lys Ser Pro Leu Asp Pro Arg Pro Gly Phe Val
50 55 60
Phe Ala Pro Val Ser Ile Thr Ser Ala Cys Pro Thr Thr Arg Ile *
65 70 75 79

<210> 1587
<211> 316
<212> PRT
<213> Homo sapiens

<400> 1587
Met Phe Phe Gly Ser Ala Ala Leu Gly Thr Leu Thr Gly Leu Ile Ser
1 5 10 15
Ala Leu Val Leu Lys His Ile Asp Leu Arg Lys Thr Pro Ser Leu Glu
20 25 30
Phe Gly Met Met Ile Ile Phe Ala Tyr Leu Pro Tyr Gly Leu Ala Glu
35 40 45
Gly Ile Ser Leu Ser Gly Ile Met Ala Ile Leu Phe Ser Gly Ile Val
50 55 60
Met Ser His Tyr Thr His His Asn Leu Ser Pro Val Thr Gln Ile Leu
65 70 75 80
Met Gln Gln Thr Leu Arg Thr Val Ala Phe Leu Cys Glu Thr Cys Val
85 90 95
Phe Ala Phe Leu Gly Leu Ser Ile Phe Ser Phe Pro His Lys Phe Glu
100 105 110
Ile Ser Phe Val Ile Trp Cys Ile Val Leu Val Leu Phe Gly Arg Ala
115 120 125
Val Asn Ile Phe Pro Leu Ser Tyr Leu Leu Asn Phe Phe Arg Asp His
130 135 140
Lys Ile Thr Pro Lys Met Met Phe Ile Met Trp Phe Ser Gly Leu Arg
145 150 155 160
Gly Ala Ile Pro Tyr Ala Leu Ser Leu His Leu Asp Leu Glu Pro Met
165 170 175
Glu Lys Arg Gln Leu Ile Gly Thr Thr Thr Ile Val Ile Val Leu Phe
180 185 190
Thr Ile Leu Leu Leu Gly Gly Ser Thr Met Pro Leu Ile Arg Leu Met
195 200 205
Asp Ile Glu Asp Ala Lys Ala His Arg Arg Asn Lys Lys Asp Val Asn
210 215 220
Leu Ser Lys Thr Glu Lys Met Gly Asn Thr Val Glu Ser Glu His Leu
225 230 235 240
Ser Glu Leu Thr Glu Glu Glu Tyr Glu Ala His Tyr Ile Arg Arg Gln
245 250 255
Asp Leu Lys Gly Phe Val Trp Leu Asp Ala Lys Tyr Leu Asn Pro Phe
260 265 270

Phe Thr Arg Arg Leu Thr Gln Glu Asp Leu His His Gly Arg Ile Gln
275 280 285
Met Lys Thr Leu Thr Asn Lys Trp Tyr Glu Glu Val Arg Gln Gly Pro
290 295 300
Ser Gly Ser Glu Asp Asp Glu Gln Glu Leu Leu *
305 310 315

<210> 1588
<211> 53
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(53)
<223> Xaa = any amino acid or nothing

<400> 1588
Met Cys Ser Leu Met Phe Gly Ser Ser Val Phe Val Cys Phe Pro Pro
1 5 10 15
Cys Val Pro Leu Pro Ala Pro His Ser Gly Gly Pro Pro His Arg Ala
20 25 30
Gly Arg Ser Val Phe Ser Ala Met Lys Leu Gly Lys Xaa Arg Ser His
35 40 45
Lys Glu Glu Pro Gln
50 53

<210> 1589
<211> 437
<212> PRT
<213> Homo sapiens

<400> 1589
Met Leu Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp Cys
1 5 10 15
Ser Gln Ser Leu Ala Ala Ala Ala Ala Val Ala Ala Ala Gly Gly Arg
20 25 30
Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu Thr Thr Ile
35 40 45
Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys Phe Arg Asp Glu
50 55 60
Val Glu Asp Asp Tyr Phe Arg Thr Trp Ser Pro Gly Lys Pro Phe Asp
65 70 75 80
Gln Ala Leu Asp Pro Ala Lys Asp Pro Cys Leu Lys Met Lys Cys Ser
85 90 95
Arg His Lys Val Cys Ile Ala Gln Asp Ser Gln Thr Ala Val Cys Ile
100 105 110
Ser His Arg Arg Leu Thr His Arg Met Lys Glu Ala Gly Val Asp His
115 120 125
Arg Gln Trp Arg Gly Pro Ile Leu Ser Thr Cys Lys Gln Cys Pro Val
130 135 140
Val Tyr Pro Ser Pro Val Cys Gly Ser Asp Gly His Thr Tyr Ser Phe
145 150 155 160
Gln Cys Lys Leu Glu Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser

```
                165                 170                 175
Val Lys Cys Glu Gly His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser
            180                 185                 190
Thr Ser Arg Asn Val Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu
        195                 200                 205
Val Ala Asn Arg Leu Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly
    210                 215                 220
Ser Gln Asn Lys Lys Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg
225                 230                 235                 240
Phe Asp Thr Ser Ile Leu Pro Ile Cys Lys Asp Ser Leu Gly Trp Met
                245                 250                 255
Phe Asn Arg Leu Asp Thr Asn Tyr Asp Leu Leu Leu Asp Gln Ser Glu
            260                 265                 270
Leu Arg Ser Ile Tyr Leu Asp Lys Asn Glu Gln Cys Thr Lys Ala Phe
        275                 280                 285
Phe Asn Ser Cys Asp Thr Tyr Lys Asp Ser Leu Ile Ser Asn Asn Glu
    290                 295                 300
Trp Cys Tyr Cys Phe Gln Arg Gln Gln Asp Pro Pro Cys Gln Thr Glu
305                 310                 315                 320
Leu Ser Asn Ile Gln Lys Arg Gln Gly Val Lys Lys Leu Leu Gly Gln
                325                 330                 335
Tyr Ile Pro Leu Cys Asp Glu Asp Gly Tyr Tyr Lys Pro Thr Gln Cys
            340                 345                 350
His Gly Ser Val Gly Gln Cys Trp Cys Val Asp Arg Tyr Gly Asn Glu
        355                 360                 365
Val Met Gly Ser Arg Ile Asn Gly Val Ala Asp Cys Ala Ile Asp Phe
    370                 375                 380
Glu Ile Ser Gly Asp Phe Ala Ser Gly Asp Phe His Glu Trp Thr Asp
385                 390                 395                 400
Asp Glu Asp Asp Glu Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu
                405                 410                 415
Asp Asp Asp Glu Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His
            420                 425                 430
Asp Val Tyr Ile  *
        435 436
```

```
<210> 1590
<211> 49
<212> PRT
<213> Homo sapiens


<400> 1590
Met Phe Gln Ile Tyr Phe Ser Phe Cys Gln Leu Cys Phe Ile Trp Ser
 1               5                  10                  15
Cys Phe Phe Asn Ser Arg Glu Thr Phe Asn Glu Ile Tyr Lys Phe Phe
            20                  25                  30
Leu Lys Ser Val Met Val Arg Lys Ile Phe Glu Cys His Lys Met Ser
        35                  40                  45                  48
 *


<210> 1591
<211> 73
<212> PRT
```

<213> Homo sapiens

<400> 1591
Met Ser Leu Asn Val Leu Leu Ala Leu Phe Cys Leu Leu Leu Ala Lys
1 5 10 15
Glu Arg Thr Thr Thr Lys Arg Cys Ile Ser Cys Leu Pro Phe Ser Thr
20 25 30
Phe Phe Ser Phe Gly Pro Leu Gln Lys Val Thr Asp Pro Ser Ser Trp
35 40 45
Ala Leu Ala Phe Ser Val Cys Gln Ala Cys Thr Arg Ser Glu Leu Pro
50 55 60
Gly Ala Leu Arg Thr Arg Gly Ser Thr
65 70 73

<210> 1592
<211> 62
<212> PRT
<213> Homo sapiens

<400> 1592
Met Tyr Phe Ser Leu Ile Phe Leu Val Phe Phe Phe Leu Ser Leu Pro
1 5 10 15
Leu Ser Ser Ser Ser Ser Glu Pro Thr Ser Ser Ile Leu Gly Phe Ser
20 25 30
Ser Ser Ser Leu Ser Ser Ser Ser Phe Ser Pro Phe Ser Ser Ser Ala
35 40 45
Ser Ser Ser Leu Ile Ser Phe Ser Arg Ser Phe Ser Lys *
50 55 60 61

<210> 1593
<211> 128
<212> PRT
<213> Homo sapiens

<400> 1593
Met Arg Ala Met Leu Gly Thr Cys Ala Leu Gly Gln Phe Phe Leu Ile
1 5 10 15
Met Gly Asn Thr Gln Arg Cys Asp Asp Phe Pro Thr Glu Ser Pro Pro
20 25 30
Ala Lys Thr Asn Val Ser Arg Ala Gly Leu Ser Pro Pro Cys Glu Ala
35 40 45
Leu His Gly Val Glu Ser Arg Gly Ser Cys Ser His Gly Lys Leu Gln
50 55 60
Ser Pro Pro Gly Arg Asp Trp Pro Gln Gly Asp Pro Gln Asp Arg Pro
65 70 75 80
Lys Arg Arg Trp Gln Arg Pro Gly Pro Ala Gly Arg Gly Ala Pro Asp
85 90 95
Pro Thr Pro Lys Gly Gln Gly Ala Ala Val Pro Pro Arg Ser Ala Ser
100 105 110
Met Phe Leu Ile His Lys Gln Met Trp Ala Tyr Gly Phe Gly Asp *
115 120 125 127

<210> 1594
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1594
Met Ile Trp Ala Leu Ser Ser Ser Leu Ile Pro Phe Leu Ile Ala Leu
1 5 10 15
Cys Phe Val His Ser Ala Asn Ser His Leu Gln Val Leu Val Ile Cys
20 25 30
Ser Ser Leu Phe Leu Glu Pro Pro Pro His Asn Phe Met *
35 40 45

<210> 1595
<211> 86
<212> PRT
<213> Homo sapiens

<400> 1595
Met Trp Glu Glu Leu Leu Arg Gly Leu Thr Ala Pro Tyr Trp Leu Ser
1 5 10 15
Ser Trp Leu Cys Phe Ser Trp Arg Ala Ala Thr Val Ala Val Ala Val
20 25 30
Ala Val Ala Val Ala Ala Ala Ala Ala Thr Ala Ala Ala Ala Ala Ala
35 40 45
Cys Val Lys Ser Val Glu Gly Leu Ala Ala Cys Glu Gly Arg Pro Arg
50 55 60
Pro Pro Gly Pro Pro Ala Tyr Leu Gln Glu Thr Gln Asp Cys His Ala
65 70 75 80
Leu Cys Val Gly Ser *
85

<210> 1596
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1596
Met Val Leu Ser Trp Leu Thr Leu Ile Glu Ala Leu Ala Asp Val Met
1 5 10 15
Thr Thr Asp Gly Asn Met Leu Gln Leu Phe Cys Val Glu Arg Thr Asn
20 25 30
Leu Leu Val Asn Gln Ile Arg Met Thr Leu Tyr Ala Gln Tyr Arg His
35 40 45
Val Arg Pro Phe Arg Thr Ile Met Lys Pro Ile Leu Thr Arg Glu Val
50 55 60
Gln Thr Lys Asp *
65 68

<210> 1597
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1597
Met Phe Leu Leu Phe Ser Arg Ile Ser Asn Leu Met Phe Val Asn His
1 5 10 15
Lys Leu Pro Met Leu Ile Thr Glu Asn Lys Gln Val Ser Lys Glu Glu
20 25 30
Asn Lys Ala Thr His Ser His Arg Ser Ser Phe Gln Ser Ser Thr Ile
35 40 45
Ser Ser Arg Leu Asn Leu Ile *
50 55

<210> 1598
<211> 97
<212> PRT
<213> Homo sapiens

<400> 1598
Met His Glu Ser Pro Leu Ala Trp Ala Ser Val His Leu Ser Ser Leu
1 5 10 15
Pro Leu Leu Cys Thr Ala Cys Ser Ser Pro Leu Met Gly Asn Ser Val
20 25 30
Leu Cys Arg Ala Pro Ala Asp Met Gly Leu Ala Trp Met Leu Leu Leu
35 40 45
Ser Glu Pro Arg Arg Val Val Pro Gly Ile Ala Ala Gln Val Leu Thr
50 55 60
Ala Leu Arg Arg Arg Leu Leu Ser Gly Thr Leu Pro Ser Phe Pro Arg
65 70 75 80
Arg Lys Asn Pro Leu His Glu His Leu Leu Ala Phe Ile Val Arg Leu
85 90 95 96
*

<210> 1599
<211> 113
<212> PRT
<213> Homo sapiens

<400> 1599
Met Thr Val Ser Gly Thr Val Val Leu Val Ala Gly Thr Leu Cys Phe
1 5 10 15
Ala Trp Trp Ser Glu Gly Asp Ala Thr Ala Gln Pro Gly Gln Leu Ala
20 25 30
Pro Pro Thr Glu Tyr Pro Val Pro Glu Gly Pro Ser Pro Leu Leu Arg
35 40 45
Ser Val Ser Phe Val Cys Cys Gly Ala Gly Gly Leu Leu Leu Leu Ile
50 55 60
Gly Leu Leu Trp Ser Val Lys Ala Ser Ile Pro Gly Pro Pro Arg Trp

```
65                  70                  75                  80
Asp Pro Tyr His Leu Ser Arg Asp Leu Tyr Tyr Leu Thr Val Glu Ser
                85                  90                  95
Ser Glu Lys Glu Ser Cys Arg Thr Pro Lys Val Val Asp Ile Pro Asp
            100                 105                 110     112
*
```

<210> 1600
<211> 103
<212> PRT
<213> Homo sapiens

<400> 1600

```
Met Gly Ala Trp Ala Trp Val Pro Thr Pro Ser Leu Cys Leu Cys His
 1               5                  10                  15
Ser Thr Cys Leu Glu Phe Leu Leu Phe Leu Tyr Ile Leu Phe Tyr Cys
            20                  25                  30
Ile Phe Glu Thr Val Ser Leu Ser Pro Arg Leu Glu Arg Ser Gly Ala
        35                  40                  45
Ile Leu Ala Arg Cys Asn Leu Cys Leu Arg Gly Ser Ser Asp Ser Arg
    50                  55                  60
Ala Leu Ala Ser Arg Val Ala Glu Thr Thr Gly Met His His His Ala
65                  70                  75                  80
Trp Leu Ile Phe Ala Phe Leu Val Glu Thr Gly Phe His His Val Gly
                85                  90                  95
Gln Ala Gly Leu Asn Ser  *
            100     102
```

<210> 1601
<211> 84
<212> PRT
<213> Homo sapiens

<400> 1601

```
Met Val Ala Leu Leu Cys Arg Gln Ile Ile Ser Ala Ala Phe Ser Gly
 1               5                  10                  15
Glu Gly Thr Pro Leu Cys Ser Trp Ser Ser Gly Pro Ile Leu Ser Ser
            20                  25                  30
Val Cys Leu Leu Cys Pro Leu Ala Val Leu Cys Pro Ala Lys Pro Glu
        35                  40                  45
Pro Arg Ala Phe Thr Asp Leu Arg Gly Glu Glu Val Cys Ala Asp Trp
    50                  55                  60
Phe Met Gly Gly His Gly Arg Val Glu Arg Gly Thr Met Ser Pro His
65                  70                  75                  80
Ser Gly Leu  *
        83
```

<210> 1602
<211> 91
<212> PRT

<213> Homo sapiens

<400> 1602

```
Met Lys Thr Leu Pro Val Leu Val Leu Ser Leu Thr Leu Leu Thr Val
 1               5                   10                  15
Phe Ser Glu Thr Ser Pro Ile Leu Thr Glu Lys Gln Ala Lys Gln Leu
            20                  25                  30
Leu Arg Ser Arg Arg Gln Asp Arg Pro Ser Lys Pro Gly Phe Pro Asp
        35                  40                  45
Glu Pro Met Arg Glu Tyr Met His His Leu Leu Ala Leu Glu His Arg
    50                  55                  60
Ala Glu Glu Gln Phe Leu Glu His Trp Leu Asn Pro His Cys Lys Pro
65                  70                  75                  80
His Cys Asp Arg Asn Arg Ile His Pro Val  *
                85                  90
```

<210> 1603
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1603

```
Met Lys Arg Asp Val Leu Ile Thr Glu Thr Phe Cys Ile Leu Phe Trp
 1               5                   10                  15
Leu Cys Ala Phe Ser Ser Met Asn Asp Tyr Val Phe Lys Pro His Val
            20                  25                  30
Leu Tyr Ile Asp Cys Pro Leu Lys Arg Leu Asp Ser Ser Val Cys Gln
        35                  40                  45
His Ile Gly Thr Glu Tyr Asn Tyr Thr Leu Ile Ile Ser Gln Val Phe
    50                  55                  60
Ile Leu Glu Val  *
65          68
```

<210> 1604
<211> 83
<212> PRT
<213> Homo sapiens

<400> 1604

```
Met Leu Gln Pro Met Phe Phe Thr Leu Ser Thr His Leu Val Gly Leu
 1               5                   10                  15
Ser Gln Ile Ser Tyr Leu Ser Phe Pro Leu Ile Ser Leu His Pro Ala
            20                  25                  30
Gln Val Val Lys Arg Gln Ser Ser Leu Pro Arg Leu Met Gln Ser Ser
        35                  40                  45
Lys Glu Ser Lys Ala Val Leu Val Glu Ile Ile Leu Arg Ala Arg Lys
    50                  55                  60
Val Val Lys Tyr Ile Ser Lys Gly Phe Leu Arg Ala Val Cys Ala Glu
65                  70                  75                  80
Met Ile  *
    82
```

<210> 1605
<211> 110
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(110)
<223> Xaa = any amino acid or nothing

<400> 1605
Met Ser Thr Ile Ile Phe Gln Trp Pro Phe Met Leu Val Ser Leu His
1 5 10 15
Arg Cys Arg Lys Leu Pro Arg Ala Leu Lys Asp Trp Gln Ala Phe Leu
20 25 30
Asp Leu Lys Lys Ile Ile Asp Asp Phe Ser Glu Cys Cys Pro Leu Leu
35 40 45
Glu Tyr Met Gly Ser Lys Ala Met Met Glu Arg His Xaa Glu Arg Ile
50 55 60
Thr Thr Leu Thr Gly His Ser Leu Asp Val Gly Asn Glu Ser Phe Lys
65 70 75 80
Leu Arg Asn Ile Met Glu Ala Pro Leu Leu Xaa Tyr Lys Glu Glu Ile
85 90 95
Glu Val Glu Tyr Asp Val Met Glu Asp Cys Lys Val Ser Trp
100 105 110

<210> 1606
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1606
Met Thr Ala Gly Thr Val Thr Met Leu Leu Trp His Ala Ser Asn Trp
1 5 10 15
Asp Val Gln Leu Pro Ser Gln Pro Leu Val Glu Leu Thr Pro Val Arg
20 25 30
Asp Leu Asp Thr Ser Gly Leu Thr Ala Phe Leu Ala Arg Asp Met Asn
35 40 45
Leu Leu Ser Gly Asn Val Asn Thr Met Asn Gly Glu Ser Ile Ile Ala
50 55 60
Ile Thr Met Lys Met Leu Ala *
65 70 71

<210> 1607
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1607
Met Phe Thr Arg Phe Ile Gly Leu Phe Leu Lys Phe Ile Leu Met Phe
1 5 10 15

Phe Leu Leu Leu Ser Phe Ile Ser Tyr Phe Cys Leu Phe Pro Cys Ser
20 25 30
Asn Leu Pro Lys Val Ile Ala Ile Phe Asn Ile Val Leu Ile Leu Ser
35 40 45
Ile Val Phe Arg Glu Ile Thr Asp Thr Tyr *
50 55 58

<210> 1608
<211> 118
<212> PRT
<213> Homo sapiens

<400> 1608
Met Leu Val Thr Asp Thr Glu Ala Phe Trp Gln Pro Gln Pro Trp Phe
1 5 10 15
Val Val Val Leu Thr Ala Thr Gly Ala Leu Leu Leu Leu Ala Leu Gly
20 25 30
Trp Leu Leu Gly Arg Leu Leu Gln Gly Leu Ala Gln Leu Leu Gln Ala
35 40 45
Pro Ser Lys Pro Ala Gln Ala Leu Leu Leu Asn Ser Ile Gln Gly Thr
50 55 60
Glu Gly Ser Ile Glu Gly Phe Leu Glu Ala Pro Lys Met Glu Met Ser
65 70 75 80
Gln Ala Pro Ser Ser Val Met Ser Leu Gln His Phe Asp Gly Arg Thr
85 90 95
Gln Asp Ser Arg Thr Gly Arg Asp Tyr Leu Val Asn Thr His Thr Gly
100 105 110
Ala Arg Arg Trp Leu *
115 117

<210> 1609
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1609
Met Val Ile Gly Ser Leu His Thr Phe Thr Leu Leu Ala Ala Ser Ser
1 5 10 15
Leu Val Asp Thr Pro Lys Gln Ile Gln Leu Leu Met Gln Asn Leu Met
20 25 30
Asn Asp Pro Arg Lys Glu Val Lys Ile Leu Ala Ile Gln Asp Leu Lys
35 40 45
Leu Leu
50

<210> 1610
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1610

```
Met Val Leu Ile Leu Ser Pro Gly Leu Ser Ile Leu Phe Thr Lys Met
  1               5                  10                  15
Ser Glu Thr Phe Ser Ser Ser Leu Leu Lys Leu Ser Ser Ser Ile Cys
             20                  25                  30
Ile Phe Pro Leu Cys Ile Asn Met Ile Ile Cys Tyr Gln Lys Lys Ser
         35                  40                  45
Gln  *
 49
```

<210> 1611
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1611

```
Met Ser Phe Gln Ala Phe Val Phe Leu Met Ile Gly Trp Leu His Pro
  1               5                  10                  15
Asp Pro Arg Leu Met Thr Gln Arg Ser Cys Gly Pro His Pro Glu Val
             20                  25                  30
Asp Ser Ala Gln Glu Asp His Phe Ser His Pro Tyr Asp Ile Pro Asn
         35                  40                  45
Gln Ser Ala Pro Pro Leu Pro  *
     50                  55
```

<210> 1612
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1612

```
Met Leu Thr Leu Ala Leu Leu Val Leu Arg Ile Cys Val Cys Glu Ala
  1               5                  10                  15
Ala Ser Thr Phe Val Cys Pro Cys Leu Pro Trp Leu Ser Leu Leu Phe
             20                  25                  30
Leu His Leu Leu Pro Arg Leu Phe Gln Val Gln Ile Trp Phe Leu Leu
         35                  40                  45
Phe Leu Pro Phe Leu Leu Leu Leu Pro Ser Val Pro Glu Ile Phe Pro
     50                  55                  60
Ala Pro Gln Ala Trp Gly Leu Gly Cys Ser  *
 65                  70              74
```

<210> 1613
<211> 192
<212> PRT
<213> Homo sapiens

<400> 1613

```
Met Phe Thr Cys Leu Phe Leu Phe Ser Ala Val Leu Arg Ala Leu Phe
  1               5                  10                  15
```

```
Arg Lys Ser Asp Pro Lys Arg Phe Gln Asn Ile Phe Thr Thr Ile Phe
            20                  25                  30
Thr Leu Phe Thr Leu Leu Thr Leu Asp Asp Trp Ser Leu Ile Tyr Met
        35                  40                  45
Asp Ser Arg Ala Gln Gly Ala Trp Tyr Ile Ile Pro Ile Leu Ile Ile
    50                  55                  60
Tyr Ile Ile Ile Gln Tyr Phe Ile Phe Leu Asn Leu Val Ile Thr Val
65                  70                  75                  80
Leu Val Asp Ser Phe Gln Thr Ala Leu Phe Lys Gly Leu Glu Lys Ala
                85                  90                  95
Lys Gln Glu Arg Ala Ala Arg Ile Gln Glu Lys Leu Leu Glu Asp Ser
            100                 105                 110
Leu Thr Glu Leu Arg Ala Ala Glu Pro Lys Glu Val Ala Ser Glu Gly
        115                 120                 125
Thr Met Leu Lys Arg Leu Ile Glu Lys Lys Phe Gly Thr Met Thr Glu
    130                 135                 140
Lys Gln Gln Glu Leu Leu Phe His Tyr Leu Gln Leu Val Ala Ser Val
145                 150                 155                 160
Glu Gln Glu Gln Gln Lys Phe Arg Ser Gln Ala Ala Val Ile Asp Glu
                165                 170                 175
Ile Val Asp Thr Thr Phe Glu Ala Gly Glu Glu Asp Phe Arg Asn  *
            180                 185                 190 191
```

<210> 1614
<211> 153
<212> PRT
<213> Homo sapiens

<400> 1614

```
Met Asp Leu Val Gln Phe Phe Val Thr Phe Phe Ser Cys Phe Leu Ser
 1               5                  10                  15
Leu Leu Leu Val Ala Ala Val Val Trp Lys Ile Lys Gln Thr Cys Trp
            20                  25                  30
Ala Ser Arg Arg Arg Glu Gln Leu Leu Arg Glu Arg Gln Gln Met Ala
        35                  40                  45
Ser Arg Pro Phe Ala Ser Val Asp Val Ala Leu Glu Val Gly Ala Glu
    50                  55                  60
Gln Thr Glu Phe Leu Arg Gly Pro Leu Glu Gly Ala Pro Lys Pro Ile
65                  70                  75                  80
Ala Ile Glu Pro Cys Ala Gly Asn Arg Ala Ala Val Leu Thr Val Phe
                85                  90                  95
Leu Cys Leu Pro Arg Gly Ser Ser Gly Ala Pro Pro Pro Gly Gln Ser
            100                 105                 110
Gly Leu Ala Ile Ala Ser Ala Leu Ile Asp Ile Ser Gln Gln Lys Ala
        115                 120                 125
Ser Asp Ser Lys Asp Lys Thr Ser Gly Val Arg Asn Arg Lys His Leu
    130                 135                 140
Ser Thr Arg Gln Gly Thr Cys Val  *
145                 150     152
```

<210> 1615
<211> 135
<212> PRT
<213> Homo sapiens

<400> 1615
Met His Trp Leu Arg Ala Ser Ala Gly Ser Leu Leu Met Val Pro Leu
1 5 10 15
Met Thr Asp Leu His Glu Leu Ala Leu Pro Pro Ala Ser Leu Arg Thr
20 25 30
Val Val Lys Glu Asn Met Cys Val Leu Pro Phe Pro Val Lys Thr Ser
35 40 45
Gly Arg Ser Leu Thr Gly Ser Ala Trp Ser Arg Phe His Leu Pro Cys
50 55 60
His Leu Arg Pro Gly Asp Arg Leu Pro Cys His Cys Leu Gly Lys Phe
65 70 75 80
Arg Lys Arg Val Ala Lys Trp Cys Ile Arg Lys Asn Met Ala Arg Ser
85 90 95
Pro His Leu Leu Gly Gly Arg Pro Asn Ser Thr Ser Gly Pro Leu Cys
100 105 110
Asp Phe Pro Ala Pro Ser Lys Gln Val Thr Pro Leu Leu Trp Val Ser
115 120 125
Val Ser Leu Pro Ile Lys *
130 134

<210> 1616
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1616
Met Leu His Gln Met Lys Phe Ile Gly His Leu Ile Phe Ile Val Val
1 5 10 15
Leu Asp Pro Asp Leu Ser Asp Met Lys Asn Asn Glu Pro Tyr Asp Tyr
20 25 30
Lys Phe Val Lys Trp Met Thr Lys His Lys Val Met Phe Ile Val Leu
35 40 45
Cys Lys Ile Leu Leu Tyr Phe Ile Val Asn Phe *
50 55 59

<210> 1617
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1617
Met Pro Glu His Leu Cys Phe Glu Ile Cys Asn Thr Leu Leu Asn Phe
1 5 10 15
Phe Ser Phe Leu Leu Leu Cys Val Thr Asp His Glu Thr Thr Phe Phe
20 25 30
Asp Ser Gly Trp Lys Ala Ser Gly Ser Thr Val Thr Cys Lys Ala Gly
35 40 45 48
*

<210> 1618
<211> 95
<212> PRT
<213> Homo sapiens

<400> 1618
```
Met Trp Thr Val Leu Trp His Arg Phe Ser Met Val Leu Arg Leu Pro
 1               5                  10                  15
Glu Glu Ala Ser Ala Gln Glu Gly Glu Leu Ser Leu Ser Ser Pro Pro
            20                  25                  30
Ser Pro Glu Pro Asp Trp Thr Leu Ile Ser Pro Gln Gly Met Ala Ala
        35                  40                  45
Leu Leu Ser Leu Ala Met Ala Thr Phe Thr Gln Glu Pro Gln Leu Cys
    50                  55                  60
Leu Ser Cys Leu Ser Gln His Gly Ser Ile Leu Met Ser Ile Leu Lys
65                  70                  75                  80
His Leu Leu Cys Pro Ser Phe Leu Asn Gln Leu Arg Gln Ala  *
                85                  90              94
```

<210> 1619
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1619
```
Met Ile Leu Met Leu Leu Leu Leu Ile Val Asp Leu Val Gln Leu Ala
 1               5                  10                  15
Gly Asn Ala Val Ile Ser Ser Gly Ser Trp Asp Ser Ala Cys Thr Gly
            20                  25                  30
Thr Pro Ser Pro Ser Thr Pro Ser Thr Trp Pro Gly Pro Thr Ser Ser
        35                  40                  45
Ser Ala Pro Arg Phe  *
    50          53
```

<210> 1620
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1620
```
Met Cys Cys Ser Phe Leu Leu Glu Gly Leu Ile Ser Leu Phe Ser Leu
 1               5                  10                  15
Gln Leu Phe Ser Val Gln Leu Val Leu Leu Phe Phe Leu Trp Ile Val
            20                  25                  30
Ser Tyr Ser Lys Lys Gln Ile Lys Asp Thr Phe Ala Lys Thr Lys Asn
        35                  40                  45
Thr Val Ala Arg Ile Leu Leu Ser Ile Pro Asp Leu Pro Ser Leu Thr
    50                  55                  60
Leu Ile Thr Gln Ile Leu  *
65                  70
```

<210> 1621
<211> 90
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(90)
<223> Xaa = any amino acid or nothing

<400> 1621
Met Asp His Lys Ser Leu Trp Ala Gly Val Glu Val Leu Leu Leu Leu
1 5 10 15
Gln Gly Gly Ser Ala Tyr Lys Leu Val Cys Tyr Phe Thr Asn Trp Ser
20 25 30
Gln Asp Arg Gln Glu Pro Gly Lys Phe Thr Pro Glu Asn Ile Asp Pro
35 40 45
Phe Leu Cys Ser His Leu Ile Tyr Ser Phe Ala Ser Ile Glu Asn Asn
50 55 60
Lys Val Ile Ile Arg Thr Pro Xaa Phe Phe Pro Leu Pro Leu Gly His
65 70 75 80
Arg Leu Gln Thr Ile Asn Pro Arg Leu *
85 89

<210> 1622
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1622
Met Gln Cys Ala Ile Cys Ile Leu Leu Tyr Leu Leu Asn Lys Lys Thr
1 5 10 15
Val Trp Arg Cys Ser Arg Ile His His Asn Asn Thr Val Val Leu Thr
20 25 30
Arg Glu Ser Ser Pro Phe Leu Thr Thr Cys Thr Leu Ser Ser Val Leu
35 40 45
Leu Thr Lys Ala *
50 52

<210> 1623
<211> 978
<212> PRT
<213> Homo sapiens

<400> 1623
Met Pro Ala Arg Arg Leu Leu Leu Leu Leu Thr Leu Leu Leu Pro Gly
1 5 10 15
Leu Gly Ile Phe Gly Ser Thr Ser Thr Val Thr Leu Pro Glu Thr Leu
20 25 30
Leu Phe Val Ser Thr Leu Asp Gly Ser Leu His Ala Val Ser Lys Arg
35 40 45

Thr Gly Ser Ile Lys Trp Thr Leu Lys Glu Asp Pro Val Leu Gln Val
50 55 60
Pro Thr His Val Glu Glu Pro Ala Phe Leu Pro Asp Pro Asn Asp Gly
65 70 75 80
Ser Leu Tyr Thr Leu Gly Ser Lys Asn Asn Glu Gly Leu Thr Lys Leu
85 90 95
Pro Phe Thr Ile Pro Glu Leu Val Gln Ala Ser Pro Cys Arg Ser Ser
100 105 110
Asp Gly Ile Leu Tyr Met Gly Lys Lys Gln Asp Ile Trp Tyr Val Ile
115 120 125
Asp Leu Leu Thr Gly Glu Lys Gln Gln Thr Leu Ser Ser Ala Phe Ala
130 135 140
Asp Ser Leu Cys Pro Ser Thr Ser Leu Leu Tyr Leu Gly Arg Thr Glu
145 150 155 160
Tyr Thr Ile Thr Met Tyr Asp Thr Lys Thr Arg Glu Leu Arg Trp Asn
165 170 175
Ala Thr Tyr Phe Asp Tyr Ala Ala Ser Leu Pro Glu Asp Asp Val Asp
180 185 190
Tyr Lys Met Ser His Phe Val Ser Asn Gly Asp Gly Leu Val Val Thr
195 200 205
Val Asp Ser Glu Ser Gly Asp Val Leu Trp Ile Gln Asn Tyr Ala Ser
210 215 220
Pro Val Val Ala Phe Tyr Val Trp Gln Arg Glu Gly Leu Arg Lys Val
225 230 235 240
Met His Ile Asn Val Ala Val Glu Thr Leu Arg Tyr Leu Thr Phe Met
245 250 255
Ser Gly Glu Val Gly Arg Ile Thr Lys Trp Lys Tyr Pro Phe Pro Lys
260 265 270
Glu Thr Glu Ala Lys Ser Lys Leu Thr Pro Thr Leu Tyr Val Gly Lys
275 280 285
Tyr Ser Thr Ser Leu Tyr Ala Ser Pro Ser Met Val His Glu Gly Val
290 295 300
Ala Val Val Pro Arg Gly Ser Thr Leu Pro Leu Leu Glu Gly Pro Gln
305 310 315 320
Thr Asp Gly Val Thr Ile Gly Asp Lys Gly Glu Cys Val Ile Thr Pro
325 330 335
Ser Thr Asp Val Lys Phe Asp Pro Gly Leu Lys Ser Lys Asn Lys Leu
340 345 350
Asn Tyr Leu Arg Asn Tyr Trp Leu Leu Ile Gly His His Glu Thr Pro
355 360 365
Leu Ser Ala Ser Thr Lys Met Leu Glu Arg Phe Pro Asn Asn Leu Pro
370 375 380
Lys His Arg Glu Asn Val Ile Pro Ala Asp Ser Glu Lys Lys Ser Phe
385 390 395 400
Glu Glu Val Ile Asn Leu Val Asp Gln Thr Ser Glu Asn Ala Pro Thr
405 410 415
Thr Val Ser Arg Asp Val Glu Glu Lys Pro Ala His Ala Pro Ala Arg
420 425 430
Pro Glu Ala Pro Val Asp Ser Met Leu Lys Asp Met Ala Thr Ile Ile
435 440 445
Leu Ser Thr Phe Leu Leu Ile Gly Trp Val Ala Phe Ile Ile Thr Tyr
450 455 460
Pro Leu Ser Met His Gln Gln Gln Gln Leu Gln His Gln Gln Phe Gln
465 470 475 480
Lys Glu Leu Glu Lys Ile Gln Leu Leu Gln Gln Gln Gln Gln Leu
485 490 495
Pro Phe His Pro Pro Gly Asp Thr Ala Gln Asp Gly Glu Leu Leu Asp
500 505 510
Thr Ser Gly Pro Tyr Ser Glu Ser Ser Gly Thr Ser Ser Pro Ser Thr

515 520 525
Ser Pro Arg Ala Ser Asn His Ser Leu Cys Ser Gly Ser Ser Ala Ser
530 535 540
Lys Ala Gly Ser Ser Pro Ser Leu Glu Gln Asp Asp Gly Asp Glu Glu
545 550 555 560
Thr Ser Val Val Ile Val Gly Lys Ile Ser Phe Cys Pro Lys Asp Val
565 570 575
Leu Gly His Gly Ala Glu Gly Thr Ile Val Tyr Arg Gly Met Phe Asp
580 585 590
Asn Arg Asp Val Ala Val Lys Arg Ile Leu Pro Glu Cys Phe Ser Phe
595 600 605
Ala Asp Arg Glu Val Gln Leu Leu Arg Glu Ser Asp Glu His Pro Asn
610 615 620
Val Ile Arg Tyr Phe Cys Thr Glu Lys Asp Arg Gln Phe Gln Tyr Ile
625 630 635 640
Ala Ile Glu Leu Cys Ala Ala Thr Leu Gln Glu Tyr Val Glu Gln Lys
645 650 655
Asp Phe Ala His Leu Gly Leu Glu Pro Ile Thr Leu Leu Gln Gln Thr
660 665 670
Thr Ser Gly Leu Ala His Leu His Ser Leu Asn Ile Val His Arg Asp
675 680 685
Leu Lys Pro His Asn Ile Leu Ile Ser Met Pro Asn Ala His Gly Lys
690 695 700
Ile Lys Ala Met Ile Ser Asp Phe Gly Leu Trp Lys Lys Leu Ala Val
705 710 715 720
Gly Arg His Ser Phe Ser Arg Arg Ser Gly Val Pro Gly Thr Glu Gly
725 730 735
Trp Ile Ala Pro Glu Met Leu Ser Glu Asp Cys Lys Glu Asn Pro Thr
740 745 750
Tyr Thr Val Asp Ile Phe Ser Ala Gly Cys Val Phe Tyr Tyr Val Ile
755 760 765
Ser Glu Gly Ser His Pro Phe Gly Lys Ser Leu Gln Arg Gln Ala Asn
770 775 780
Ile Leu Leu Gly Ala Cys Ser Leu Asp Cys Leu His Pro Glu Lys His
785 790 795 800
Glu Asp Val Ile Ala Arg Glu Leu Ile Glu Lys Met Ile Ala Met Asp
805 810 815
Pro Gln Lys Arg Pro Ser Ala Lys His Val Leu Lys His Pro Phe Phe
820 825 830
Trp Ser Leu Glu Lys Gln Leu Gln Phe Phe Gln Asp Val Ser Asp Arg
835 840 845
Ile Glu Lys Glu Ser Leu Asp Gly Pro Ile Val Lys Gln Leu Glu Arg
850 855 860
Gly Gly Arg Ala Val Val Lys Met Asp Trp Arg Glu Asn Ile Thr Val
865 870 875 880
Pro Leu Gln Thr Asp Leu Arg Lys Phe Arg Thr Tyr Lys Gly Gly Ser
885 890 895
Val Arg Asp Leu Leu Arg Ala Met Arg Asn Lys Lys His His Tyr Arg
900 905 910
Glu Leu Pro Ala Glu Val Arg Glu Thr Leu Gly Thr Leu Pro Asp Asp
915 920 925
Phe Val Cys Tyr Phe Thr Ser Arg Phe Pro His Leu Leu Ala His Thr
930 935 940
Tyr Arg Ala Met Glu Leu Cys Ser His Glu Arg Leu Phe Gln Pro Tyr
945 950 955 960
Tyr Phe His Glu Pro Pro Glu Pro Gln Pro Pro Val Thr Pro Asp Ala
965 970 975
Leu *
977

<210> 1624
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1624
Met His Ser Cys Trp Thr Phe Gln Asp Leu Ser Leu Val Gln Leu Cys
1 5 10 15
Leu Pro Leu Ser Cys Pro Gln Gln Gly Pro Val Gly Pro Gly Gly Phe
20 25 30
Leu Leu Pro Val Ser Gln Val Gly Pro Pro Lys Pro Ala Gly His Trp
35 40 45
Gln Arg Lys Leu Leu Met Pro *
50 55

<210> 1625
<211> 146
<212> PRT
<213> Homo sapiens

<400> 1625
Met Glu Leu Ala Leu Leu Cys Gly Leu Val Val Met Ala Gly Val Ile
1 5 10 15
Pro Ile Gln Gly Gly Ile Leu Asn Leu Asn Lys Met Val Lys Gln Val
20 25 30
Thr Gly Lys Met Pro Ile Leu Ser Tyr Trp Pro Tyr Gly Cys His Cys
35 40 45
Gly Leu Gly Gly Arg Gly Gln Pro Lys Asp Ala Thr Asp Trp Cys Cys
50 55 60
Gln Thr His Asp Cys Cys Tyr Asp His Leu Lys Thr Gln Gly Cys Gly
65 70 75 80
Ile Tyr Lys Asp Tyr Tyr Arg Tyr Asn Phe Ser Gln Gly Asn Ile His
85 90 95
Cys Ser Asp Lys Gly Ser Trp Cys Glu Gln Gln Leu Cys Ala Cys Asp
100 105 110
Lys Glu Val Ala Phe Cys Leu Lys Arg Asn Leu Asp Thr Tyr Gln Lys
115 120 125
Arg Leu Arg Phe Tyr Trp Arg Pro His Cys Arg Gly Gln Thr Pro Gly
130 135 140
Cys *
145

<210> 1626
<211> 385
<212> PRT
<213> Homo sapiens

<400> 1626
Met Glu Phe Gly Leu Ser Trp Leu Phe Leu Val Ala Ile Leu Lys Gly

1 5 10 15
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
20 25 30
Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
35 40 45
Ser Ser Tyr Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
50 55 60
Glu Trp Val Ser Gly Ile Gly Gly Ser Gly Ser Ser Thr Tyr Tyr Ala
65 70 75 80
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Gln Asn
85 90 95
Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
100 105 110
Tyr Tyr Cys Ala Lys Ser His Pro Ala Tyr Tyr Tyr Gly Ser Gly Ser
115 120 125
Tyr Ser Ser His Tyr Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln
130 135 140
Gly Thr Thr Val Thr Val Ser Ser Gly Asp Gly Ser Ser Gly Gly Ser
145 150 155 160
Gly Gly Ala Ser Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Gly Thr
165 170 175
Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser
180 185 190
Gln Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly
195 200 205
Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly
210 215 220
Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
225 230 235 240
Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln
245 250 255
Gln Tyr Gly Ser Ser Pro Thr Thr Phe Gly Gln Gly Thr Lys Val Glu
260 265 270
Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser
275 280 285
Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn
290 295 300
Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala
305 310 315 320
Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys
325 330 335
Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp
340 345 350
Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Ser Gly Ala
355 360 365
Leu Ser Phe Ala Arg Ser Gln Arg Ser Phe Gln Pro Gly Glu Ser Val
370 375 380 384
*

<210> 1627
<211> 101
<212> PRT
<213> Homo sapiens

<400> 1627

```
Met Ile Val His Cys Thr Ile Ile Pro Leu Ser Phe Cys Val His Arg
 1               5                  10                  15
Leu Arg Ala Pro Leu Asp Ala Tyr Phe Gln Val Ser Arg Thr Gln Pro
            20                  25                  30
Asp Leu Pro Ala Thr Thr Tyr Asp Ser Glu Thr Arg Asn Pro Val Ser
        35                  40                  45
Glu Glu Leu Gln Val Ser Ser Ser Ser Asp Ser Asp Ser Asp Ser Ser
    50                  55                  60
Ala Glu Tyr Gly Gly Val Val Asp Gln Ala Glu Glu Ser Gly Ala Val
65                  70                  75                  80
Ile Leu Glu Gly Gln Tyr Phe Thr Gln Val Trp Thr His Lys Ala Asn
                85                  90                  95
Ile His Glu Ala  *
            100
```

<210> 1628
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1628

```
Met Ile Phe Tyr Val Ile Leu Ser Ser Pro Ser Ser Arg Thr Phe Phe
 1               5                  10                  15
Lys Ile Thr Leu Ile Met Ser Leu Gly Leu Ile Ser Lys Leu Leu Ile
            20                  25                  30
Thr Ser Cys Thr Phe Asp Thr Val Thr Phe Met Met Leu Thr Asn Ile
        35                  40                  45
Thr Lys Met Lys Ile Ser Ser Gly Lys Ala Thr Gln Ser Gln Glu Phe
    50                  55                  60
Phe Ser Glu Leu Ile Leu Tyr
65                  70  71
```

<210> 1629
<211> 112
<212> PRT
<213> Homo sapiens

<400> 1629

```
Met Ala His Tyr Lys Thr Glu Gln Asp Asp Trp Leu Ile Ile Tyr Leu
 1               5                  10                  15
Lys Tyr Leu Leu Phe Val Phe Asn Phe Phe Phe Trp Val Gly Gly Ala
            20                  25                  30
Ala Val Leu Ala Val Gly Ile Trp Thr Leu Val Glu Lys Ser Gly Tyr
        35                  40                  45
Leu Ser Val Leu Ala Ser Ser Thr Phe Ala Ala Ser Ala Tyr Ile Leu
    50                  55                  60
Ile Phe Ala Gly Val Leu Val Met Val Thr Gly Phe Leu Gly Phe Gly
65                  70                  75                  80
Ala Ile Leu Trp Glu Arg Lys Gly Cys Leu Ser Thr Tyr Phe Cys Leu
                85                  90                  95
Leu Leu Val Ile Phe Leu Asp Glu Leu Glu Ala Gly Val Leu Ala His
            100                 105                 110     112
```

<210> 1630
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1630
```
Met Trp Pro Gln Leu Leu Lys Ser Phe Phe Leu Ile Pro Thr Gln Ile
 1               5                  10                  15
His Phe Asn Leu Thr Asn Leu Pro Ser Trp Arg Arg Arg Glu Leu Arg
            20                  25                  30
Arg Phe Val Trp Val Ser Met Pro Glu Leu Ile Gly Ala Ser  *
        35                  40                  45  46
```

<210> 1631
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1631
```
Met Tyr Met Trp Ser Gly Leu Leu Gly Ser Lys Trp Thr Leu Val Tyr
 1               5                  10                  15
Ser His Phe Leu Asn Met Ala Pro Ala Ser Phe Ser His Tyr Gln Ala
            20                  25                  30
Ser Leu Pro Leu Leu Glu His Asp Thr Leu Ser Ser Ser Arg Val His
        35                  40                  45
Ser Tyr Gln Cys Pro Gly Phe Phe Cys Phe Phe Pro Ser Val Leu Glu
    50                  55                  60
Phe Ser Gln Leu Gln Lys Thr Tyr Ser Leu Cys Leu Pro Phe  *
65                  70                  75          78
```

<210> 1632
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1632
```
Met Phe Met Cys Arg Leu Leu Leu Trp Ala Thr Gly Ala Tyr Gly Phe
 1               5                  10                  15
Leu Gly Asp Asp Val Glu Tyr Thr Ser Val Leu Pro His Gln Lys Gly
            20                  25                  30
Lys Glu Ala Trp Val Phe Ile Cys Gln Leu Pro Phe Ile Ile Gly  *
        35                  40                  45      47
```

<210> 1633
<211> 58
<212> PRT

<213> Homo sapiens

<400> 1633
Met Cys Leu Arg Arg Thr Leu Leu Trp His Leu His Ile Ala Pro Leu
1 5 10 15
Val Asn Ile Leu Ser Asp Tyr Lys Pro Leu Gly Arg Trp Asn His Ala
20 25 30
Pro Ala Leu Thr Ala Gly Ala Leu His Lys Thr Thr Ile Leu Leu Pro
35 40 45
Gln Gly His Pro Lys Ala Ala Asn Pro *
50 55 57

<210> 1634
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1634
Met Leu Val Phe Asn Leu Ser Leu Val Leu Ser His Ser Val Leu Glu
1 5 10 15
Phe Val Met Phe Leu Tyr Ser Leu Asp Ser Ser His Val Cys Pro Leu
20 25 30
Val Val Pro Val Thr Leu Asp Leu Ile Tyr Leu Val Tyr Leu Pro Cys
35 40 45
Gln Ser Tyr Ile Leu Ile *
50 54

<210> 1635
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1635
Met Ala Val Val Gln Ala Leu Thr Pro Leu Val Ser Ala Ala Ala Thr
1 5 10 15
Ala Ser Cys Leu Thr Ser Cys Ser Trp Ser Leu Thr Phe Pro Glu His
20 25 30
Ser Val Asn Tyr Gln Ser His Pro Ser Glu Thr Gln Pro Tyr Leu Leu
35 40 45
Arg Ser Thr Lys Glu Lys His His His Trp Leu Thr Ala Lys Ala Thr
50 55 60
Cys Pro Ala Ala Gly Ala Glu Gly Leu Pro Ser Arg Gly *
65 70 75 77

<210> 1636
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1636
Met Phe Cys Ser Phe Pro Leu Leu Ile Leu Gln Val Tyr Pro Thr Trp
1 5 10 15
Lys Asn Pro Asn Trp His Leu Thr Phe His Thr Ser Val Phe Ser Phe
20 25 30
Pro Lys Gly Val Arg Ser Leu Ala Arg Gly Ile Pro Asp His Leu His
35 40 45
Ser Ala *
50

<210> 1637
<211> 123
<212> PRT
<213> Homo sapiens

<400> 1637
Met Gln Gln Met Met Trp Ala Gly Leu Leu Cys Pro Gln Leu Glu Trp
1 5 10 15
Leu Gln Gly Arg Ala Cys Arg Pro Cys Gly Leu Leu Ala Ser Asp Ala
20 25 30
Ala Ala Leu Trp Phe Arg Gly Gly Ile Ser Ala Trp Glu Asp Ser Cys
35 40 45
Ala Val Ser Asn Ile Arg His Glu Ala Tyr Asn Cys His Leu Ser Val
50 55 60
Phe Leu Asn Arg Cys Ala Asn Glu Leu Thr Val Gln Phe Leu Ile Ile
65 70 75 80
Leu Ala Phe Gln Ile Met Leu Ser Cys Ala Val Ile Ala Pro Ala Val
85 90 95
Pro Val Phe Gln Arg Leu Thr Leu Lys Arg Ser Gly Arg Thr Ser Leu
100 105 110
Gly Ser Thr Gly Arg Leu His Phe Cys Lys *
115 120 122

<210> 1638
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1638
Met Lys Arg Leu Arg Phe Val Leu Arg Val Phe Gln Met Thr Ala Phe
1 5 10 15
Ile Thr Gly Ala His Thr Ile Thr Asn Tyr Ser Asp Arg Arg Leu Tyr
20 25 30
Ile Ser Pro Leu Ser His Phe Phe Met Asn Ser Gly Ser Ser Ala Gln
35 40 45
Ser Val Leu Ser His Ser Tyr Val Ser Gln Ile Phe Phe Lys Asn Val
50 55 60
Ser Lys Tyr Phe *
65 68

<210> 1639

<211> 92
<212> PRT
<213> Homo sapiens

<400> 1639
Met Tyr Val Ala Gly Tyr Leu Val Ala Asn Ser Ala Ile Cys Gln Leu
1 5 10 15
Thr Gln His Ser Leu Val Lys Leu Leu Leu Gln Gly Cys Phe Leu Ile
20 25 30
Gly Ser Leu His Leu Cys Ile Cys Val Pro Met Cys Val Cys Val Cys
35 40 45
Glu Tyr Arg Ile Leu His Asp Ser Lys Ile Ser Phe Lys Tyr Leu Arg
50 55 60
Phe Thr Ile Leu Lys Arg Glu Asn Lys Asn Lys Val Leu Gln Lys Leu
65 70 75 80
Lys Lys Asn Leu Lys Ser Val His Thr Leu Ser *
85 90 91

<210> 1640
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1640
Met Thr Ala Trp Phe Cys Ser Phe Leu Ser Ser His Trp Val Ile Lys
1 5 10 15
Leu Pro Arg Phe Leu Leu Leu Val Leu Pro Phe Phe Trp Gly Lys Lys
20 25 30
Phe Ser Leu Gly Leu Ile Ser Gln Phe Phe Ser Lys Ala Tyr Phe Tyr
35 40 45
Ser Ser Tyr His Asn Tyr Ile His Thr *
50 55 57

<210> 1641
<211> 459
<212> PRT
<213> Homo sapiens

<400> 1641
Met Ser Asp Leu Leu Ser Val Phe Leu His Leu Leu Leu Leu Phe Lys
1 5 10 15
Leu Val Ala Pro Val Thr Phe Arg His His Arg Tyr Asp Asp Leu Val
20 25 30
Arg Thr Leu Tyr Lys Val Gln Asn Glu Cys Pro Gly Ile Thr Arg Val
35 40 45
Tyr Ser Ile Gly Arg Ser Val Glu Gly Arg His Leu Tyr Val Leu Glu
50 55 60
Phe Ser Asp His Pro Gly Ile His Glu Pro Leu Glu Pro Glu Val Lys
65 70 75 80
Tyr Val Gly Asn Met His Gly Asn Glu Ala Leu Gly Arg Glu Leu Met
85 90 95
Leu Gln Leu Ser Glu Phe Leu Cys Glu Glu Phe Arg Asn Arg Asn Gln

```
                100                 105                 110
Arg Ile Val Gln Leu Ile Gln Asp Thr Arg Ile His Ile Leu Pro Ser
        115                 120                 125
Met Asn Pro Asp Gly Tyr Glu Val Ala Ala Ala Gln Gly Pro Asn Lys
    130                 135                 140
Pro Gly Tyr Leu Val Gly Arg Asn Asn Ala Asn Gly Val Asp Leu Asn
145                 150                 155                 160
Arg Asn Phe Pro Asp Leu Asn Thr Tyr Ile Tyr Tyr Asn Glu Lys Tyr
                165                 170                 175
Gly Gly Pro Asn His His Leu Pro Leu Pro Asp Asn Trp Lys Ser Gln
            180                 185                 190
Val Glu Pro Glu Thr Arg Ala Val Ile Arg Trp Met His Ser Phe Asn
        195                 200                 205
Phe Val Leu Ser Ala Asn Leu His Gly Gly Ala Val Val Ala Asn Tyr
    210                 215                 220
Pro Tyr Asp Lys Ser Phe Glu His Arg Val Arg Gly Val Arg Arg Thr
225                 230                 235                 240
Ala Ser Thr Pro Thr Pro Asp Asp Lys Leu Phe Gln Lys Leu Ala Lys
                245                 250                 255
Val Tyr Ser Tyr Ala His Gly Trp Met Phe Gln Gly Trp Asn Cys Gly
            260                 265                 270
Asp Tyr Phe Pro Asp Gly Ile Thr Asn Gly Ala Ser Trp Tyr Ser Leu
        275                 280                 285
Ser Lys Gly Met Gln Asp Phe Asn Tyr Leu His Thr Asn Cys Phe Glu
    290                 295                 300
Ile Thr Leu Glu Leu Ser Cys Asp Lys Phe Pro Pro Glu Glu Glu Leu
305                 310                 315                 320
Gln Arg Glu Trp Leu Gly Asn Arg Glu Ala Leu Ile Gln Phe Leu Glu
                325                 330                 335
Gln Val His Gln Gly Ile Lys Gly Met Val Leu Asp Glu Asn Tyr Asn
            340                 345                 350
Asn Leu Ala Asn Ala Val Ile Ser Val Ser Gly Ile Asn His Asp Val
        355                 360                 365
Thr Ser Gly Asp His Gly Asp Tyr Phe Arg Leu Leu Leu Pro Gly Ile
    370                 375                 380
Tyr Thr Val Ser Ala Thr Ala Pro Gly Tyr Asp Pro Glu Thr Val Thr
385                 390                 395                 400
Val Thr Val Gly Pro Ala Glu Pro Thr Leu Val Asn Phe His Leu Lys
                405                 410                 415
Arg Ser Ile Pro Gln Val Ser Pro Val Arg Arg Ala Pro Ser Arg Arg
            420                 425                 430
His Gly Val Arg Ala Lys Val Gln Pro Gln Pro Arg Lys Lys Glu Met
        435                 440                 445
Glu Met Arg Gln Leu Gln Arg Gly Pro Ala  *
    450                 455         458
```

<210> 1642
<211> 144
<212> PRT
<213> Homo sapiens

<400> 1642

```
Met Ala Arg Cys Thr Leu Thr Leu Leu Lys Thr Met Leu Thr Glu Leu
 1               5                  10                  15
Leu Arg Gly Gly Ser Phe Glu Phe Lys Asp Met Arg Val Pro Ser Ala
            20                  25                  30
```

Leu Val Thr Leu His Met Leu Leu Cys Ser Ile Pro Leu Ser Gly Arg
35 40 45
Leu Asp Ser Asp Glu Gln Lys Ile Gln Asn Asp Ile Ile Asp Ile Leu
50 55 60
Leu Thr Phe Thr Gln Gly Val Asn Glu Lys Leu Thr Ile Ser Glu Glu
65 70 75 80
Thr Leu Ala Asn Asn Thr Trp Ser Leu Met Leu Lys Glu Val Leu Ser
85 90 95
Ser Ile Leu Lys Val Pro Glu Gly Phe Phe Ser Gly Leu Ile Leu Leu
100 105 110
Ser Glu Leu Leu Pro Leu Pro Leu Pro Met Gln Thr Thr Gln Val Ser
115 120 125
Leu Pro Tyr Asn Met His Leu Ile Asn Asp Cys Ser Asn Thr Phe *
130 135 140 143

<210> 1643
<211> 70
<212> PRT
<213> Homo sapiens

<400> 1643
Met Gly Arg Arg Trp Leu Phe Leu Ile Ala Cys Leu Arg Ser Ala Ser
1 5 10 15
Ile Leu Ala Trp Ala Thr Trp Arg Asn Pro Val Ser Thr Lys Asn Lys
20 25 30
Lys Leu Ala Ser His Asp Gly Pro His Leu Ala Val Pro Ala Ile Arg
35 40 45
Glu Ala Glu Ala Gly Arg Trp Leu Lys Pro Arg Arg Arg Arg Leu Gln
50 55 60
Arg Pro Lys Ile Ala Arg
65 70

<210> 1644
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1644
Met Gly Met Gly Thr Leu Ile Ile Met Asn Val Trp Val Leu Phe Ile
1 5 10 15
Pro Thr Arg Leu Arg Ile Asp Gln Gln Pro Val His Ile Lys Pro Ser
20 25 30
Met Arg Val Leu Asp Lys Trp Val Ser Ala Phe Val His Lys Gly Phe
35 40 45
Thr Trp Gly Thr Ser Glu Arg Ile Asn Thr Gly Ser Ser Ser Asp Ile
50 55 60
Thr Leu Gly Ile Leu Asn Lys Cys Gly Trp Ala Val Phe Cys Ala Ala
65 70 75 80
Pro *
81

<210> 1645
<211> 256
<212> PRT
<213> Homo sapiens

<400> 1645
Met Ala Ala Leu Thr Val Thr Leu Met Val Leu Ser Ser Pro Leu Ala
1   5   10   15
Leu Ala Gly Asp Thr Gln Pro Arg Phe Leu Trp Gln Gly Lys Tyr Lys
            20   25   30
Cys His Phe Phe Asn Gly Thr Glu Arg Val Gln Phe Leu Glu Arg Leu
        35   40   45
Phe Tyr Asn Gln Glu Glu Phe Val Arg Phe Asp Ser Asp Val Gly Glu
    50   55   60
Tyr Arg Ala Val Thr Glu Leu Gly Arg Pro Val Ala Glu Ser Trp Asn
65   70   75   80
Ser Gln Lys Asp Ile Leu Glu Asp Arg Arg Gly Gln Val Asp Thr Val
                85   90   95
Cys Arg His Asn Tyr Gly Val Gly Glu Ser Phe Thr Val Gln Arg Arg
            100   105   110
Val His Pro Glu Val Thr Val Tyr Pro Ala Lys Thr Gln Pro Leu Gln
        115   120   125
His His Asn Leu Leu Val Cys Ser Val Ser Gly Phe Tyr Pro Gly Ser
    130   135   140
Ile Glu Val Arg Trp Phe Arg Asn Gly Gln Glu Glu Lys Ala Gly Val
145   150   155   160
Val Ser Thr Gly Leu Ile Gln Asn Gly Asp Trp Thr Phe Gln Thr Leu
                165   170   175
Val Met Leu Glu Thr Val Pro Arg Ser Gly Glu Val Tyr Thr Cys Gln
            180   185   190
Val Glu His Pro Ser Val Met Ser Pro Leu Thr Val Glu Trp Arg Ala
        195   200   205
Arg Ser Glu Ser Ala Gln Ser Lys Met Leu Ser Gly Val Gly Gly Phe
    210   215   220
Val Leu Gly Leu Leu Phe Leu Gly Ala Gly Leu Phe Ile Tyr Phe Arg
225   230   235   240
Asn Gln Lys Gly His Ser Gly Leu Gln Pro Thr Gly Phe Leu Ser *
                245   250   255

<210> 1646
<211> 263
<212> PRT
<213> Homo sapiens

<400> 1646
Met Val Ala Trp Arg Ser Ala Phe Leu Val Cys Leu Ala Phe Ser Leu
1   5   10   15
Ala Thr Leu Val Gln Arg Gly Ser Gly Asp Phe Asp Asp Phe Asn Leu
            20   25   30
Glu Asp Ala Val Lys Glu Thr Ser Ser Val Lys Gln Pro Trp Asp His
        35   40   45
Thr Thr Thr Thr Thr Thr Asn Arg Pro Gly Thr Thr Arg Ala Pro Ala
    50   55   60
Lys Pro Pro Gly Ser Gly Leu Asp Leu Ala Asp Ala Leu Asp Asp Gln
65   70   75   80

```
Asp Asp Gly Arg Arg Lys Pro Gly Ile Gly Gly Arg Glu Arg Trp Asn
                85                  90                  95
His Val Thr Thr Thr Thr Lys Arg Pro Val Thr Thr Arg Ala Pro Ala
            100                 105                 110
Asn Thr Leu Gly Asn Asp Phe Asp Leu Ala Asp Ala Leu Asp Asp Arg
        115                 120                 125
Asn Asp Arg Asp Asp Gly Arg Arg Lys Pro Ile Ala Gly Gly Gly Gly
    130                 135                 140
Phe Ser Asp Lys Asp Leu Glu Asp Ile Val Gly Gly Gly Glu Tyr Lys
145                 150                 155                 160
Pro Asp Lys Gly Lys Gly Asp Gly Arg Tyr Gly Ser Asn Asp Asp Pro
                165                 170                 175
Gly Ser Gly Met Val Ala Glu Pro Gly Thr Ile Ala Gly Val Ala Ser
            180                 185                 190
Ala Leu Ala Met Ala Leu Ile Gly Ala Val Ser Ser Tyr Ile Ser Tyr
        195                 200                 205
Gln Gln Lys Lys Phe Cys Phe Ser Ile Gln Gln Gly Leu Asn Ala Asp
    210                 215                 220
Tyr Val Lys Gly Glu Asn Leu Glu Ala Val Val Cys Glu Glu Pro Gln
225                 230                 235                 240
Val Lys Tyr Ser Thr Leu His Thr Gln Ser Ala Glu Pro Pro Pro Pro
                245                 250                 255
Pro Glu Pro Ala Arg Ile  *
            260     262
```

<210> 1647
<211> 74
<212> PRT
<213> Homo sapiens

<400> 1647

```
Met Tyr Leu Leu Cys Trp Leu Tyr Ile Met Gly Val Leu Gly Ala Ser
  1               5                  10                  15
Cys Asn Trp His Val Gly Val Pro Phe Pro Gly Thr His Trp Pro Arg
            20                  25                  30
Ser Gln Asn His Leu Leu Trp Val Tyr Asn His Leu Asn Glu Leu Pro
        35                  40                  45
Val Pro Ala Gly Arg Ser Ser Glu Gln Leu Tyr Leu Gly Tyr Thr Glu
    50                  55                  60
Lys Tyr Gly Arg Arg Glu Arg Lys Ala  *
 65                  70          73
```

<210> 1648
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1648

```
Met Gly Leu Cys Gly Met Trp Val Leu Thr Ala Phe Leu Cys Glu Pro
  1               5                  10                  15
Met Gly Phe Arg His Arg Val Cys Pro His Arg Cys Val Arg Gly Ser
            20                  25                  30
Gly Arg Gly Ser Gly Cys Glu Cys Val Thr Met Trp Pro Cys Gly Ile
```

```
        35                      40                      45
Asn Ala Met Thr Gly Gly Phe Trp Val  *
     50                  55      57



      <210> 1649
      <211> 90
      <212> PRT
      <213> Homo sapiens


      <400> 1649
Met Gly Val Leu Leu Val Ser Met Val Val Leu Phe Ile Phe Ala Ile
  1               5                  10                  15
Leu Cys Ile Phe Ile Arg Asn Arg Ile Leu Glu Ile Val Tyr Ala Ser
             20                  25                  30
Leu Gly Ala Leu Leu Phe Thr Cys Phe Leu Ala Val Asp Thr Gln Leu
        35                  40                  45
Leu Leu Gly Asn Lys Gln Leu Ser Leu Ser Pro Glu Glu Tyr Val Phe
     50                  55                  60
Ala Ala Leu Asn Leu Tyr Thr Asp Ile Ile Asn Ile Phe Leu Tyr Ile
 65                  70                  75                  80
Leu Thr Ile Ile Gly Arg Ala Lys Glu  *
                 85              89



      <210> 1650
      <211> 113
      <212> PRT
      <213> Homo sapiens


      <400> 1650
Met Ala Leu Gly Val Pro Ile Ser Val Tyr Leu Leu Phe Asn Ala Met
  1               5                  10                  15
Thr Ala Leu Thr Glu Glu Ala Ala Val Thr Val Thr Pro Pro Ile Thr
             20                  25                  30
Ala Gln Gln Gly Asn Trp Thr Val Asn Lys Thr Glu Ala Asp Asn Ile
        35                  40                  45
Glu Gly Pro Ile Ala Leu Lys Phe Ser His Leu Cys Leu Glu Asp His
     50                  55                  60
Asn Ser Tyr Cys Ile Asn Gly Ala Cys Ala Phe His His Glu Leu Glu
 65                  70                  75                  80
Lys Ala Ile Cys Arg Cys Phe Thr Gly Tyr Thr Gly Glu Arg Cys Leu
                 85                  90                  95
Lys Leu Lys Ser Pro Tyr Asn Val Cys Ser Gly Glu Arg Arg Pro Leu
            100                 105                 110     112
 *



      <210> 1651
      <211> 50
      <212> PRT
      <213> Homo sapiens
```

<400> 1651
Met Phe Ile Lys Phe Leu Arg Ile Leu Ile Ser Leu Gln Cys Ser Ser
1 5 10 15
Phe Lys Phe Thr Val Thr Ala Lys Val Leu Phe Met Thr Tyr Lys Lys
20 25 30
Arg Ala Gln Ser Asp Phe Phe Leu Val Phe Val Asp Arg Glu Arg Ser
35 40 45
Pro *
49

<210> 1652
<211> 121
<212> PRT
<213> Homo sapiens

<400> 1652
Met Ser Arg Ala Gly Met Leu Gly Val Val Cys Ala Leu Leu Val Trp
1 5 10 15
Ala Tyr Leu Ala Val Gly Lys Leu Val Val Arg Met Thr Phe Thr Glu
20 25 30
Leu Cys Thr His His Pro Trp Ser Leu Arg Cys Glu Ser Phe Cys Arg
35 40 45
Ser Arg Val Thr Ala Cys Leu Pro Ala Pro Ala Pro Trp Leu Arg Pro
50 55 60
Phe Leu Cys Pro Met Leu Phe Ser Asp Arg Asn Pro Val Glu Cys His
65 70 75 80
Leu Phe Gly Glu Ala Val Ser Asp Pro Val Cys Lys Gly Leu Leu Pro
85 90 95
His Tyr Phe Trp His Pro Thr Phe Phe Pro Val Lys Ala Asn Cys Leu
100 105 110
Val Ser Phe Cys Pro Thr Thr Val *
115 120

<210> 1653
<211> 111
<212> PRT
<213> Homo sapiens

<400> 1653
Met Trp Ser Leu Trp Ile Trp Val Asp Gln His Gln Ala Arg Leu Ile
1 5 10 15
Pro Ser Pro Gln Val Leu Leu Leu Leu Leu Arg Glu Thr Pro Ser Thr
20 25 30
Ala Ala Ala Val Ala Gly Trp Leu Val Val Ala Ser Met Ala Leu Leu
35 40 45
Gln Leu His Ala Val Gly Gly Val Ala Leu Thr Ser Ser His Pro Phe
50 55 60
Met Trp Ala Thr Gly Glu Glu Leu Arg Lys Pro Pro Trp Gln Gly Ser
65 70 75 80
Ala Gly Ser Ala Ser Gly Val Glu Glu Leu Thr Gly Lys His Ser Cys
85 90 95
Pro Gly Pro Glu Glu Pro Ala Thr Val Gln Lys Ala Pro Ala *

100 105 110

<210> 1654
<211> 150
<212> PRT
<213> Homo sapiens

<400> 1654
Met Trp Ile Cys Arg Val Lys Gln Ala Trp Leu Pro Pro Leu Leu Ser
1 5 10 15
Pro Leu Gly Pro Pro Thr Pro Trp Asp Pro Phe Tyr Ala Ala Pro Ser
20 25 30
Pro Pro Val Trp Val Gly Ser Gly Tyr Trp Tyr Arg Gly Leu Leu Ser
35 40 45
Pro Pro Asp Gly Gly Gln Gly Ser Phe Pro Pro His Leu Cys Pro Gln
50 55 60
Cys Pro Val Gln Ala Gln Ala Gln Ile Gly Pro Tyr Phe Arg Glu Leu
65 70 75 80
Gly Glu Pro Pro Ser Glu Thr Lys Trp Tyr Leu Asn Ser His Ser His
85 90 95
His Arg Ala Ala Gly Thr Gln Arg Arg Leu Arg Cys Leu Gln His Leu
100 105 110
Leu Gly Gly Gly Gly Pro Gly Ile Gly Ser Glu Ser Pro Asn Glu Gly
115 120 125
Pro Gly Gln Val Thr His Ala Cys Asn Leu Ser Thr Leu Gly Gly Lys
130 135 140
Asp Val Arg Ile Thr *
145 149

<210> 1655
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1655
Met Ser Arg Asn Leu Arg Thr Ala Leu Ile Phe Gly Gly Phe Ile Ser
1 5 10 15
Leu Ile Gly Ala Ala Phe Tyr Pro Ile Tyr Phe Arg Pro Leu Met Arg
20 25 30
Leu Glu Glu Tyr Lys Lys Glu Gln Ala Ile Asn Arg Ala Gly Ile Val
35 40 45
Gln Glu Asp Val Gln Pro Pro Gly Leu Lys Val Trp Ser Asp Pro Phe
50 55 60
Gly Arg Lys *
65 67

<210> 1656
<211> 61
<212> PRT
<213> Homo sapiens

<400> 1656
Met His Lys Tyr Leu Cys Val Phe Glu Tyr Leu Ser Asn Leu Ser Lys
1 5 10 15
Cys Met Arg Leu Tyr Leu Ile Leu Leu Ala Ser Ile Cys Met Tyr Leu
20 25 30
Cys Val Ala Arg Arg Val Phe Leu Phe Ala Ser Val Ser Thr Gln Gly
35 40 45
Lys Ser Leu Met Tyr Ser Thr Gln Lys Val Val Lys *
50 55 60

<210> 1657
<211> 80
<212> PRT
<213> Homo sapiens

<400> 1657
Met Asn Trp Gln His Ser Thr Met Tyr Leu Phe Phe Ala Val Ser Gly
1 5 10 15
Ile Val Asp Met Leu Thr Tyr Leu Val Ser His Val Pro Leu Gly Val
20 25 30
Asp Arg Leu Val Met Gly Cys Gly Lys Tyr Ser Trp Lys Val Ser Ser
35 40 45
Ser Thr Thr Thr Ser Thr Thr Gly Leu Arg Trp Thr Ser Thr Ser Thr
50 55 60
His Ser Cys Cys Met Leu Cys Ser Glu Gly Val Leu Val Ser Pro *
65 70 75 79

<210> 1658
<211> 160
<212> PRT
<213> Homo sapiens

<400> 1658
Met Ala Phe Leu Leu Tyr His Leu Val Tyr His Ile Pro Pro Met Ala
1 5 10 15
Pro Val Ser Phe Val Phe Glu Thr Lys Ser Arg Ser Ala Ala Gln Ala
20 25 30
Gly Val Gln Trp His Asp Pro Gly Ser Pro Gln Pro Leu Pro Pro Arg
35 40 45
Phe Lys Arg Phe Ser Cys His Gly Leu Asn Ile Lys Phe Ala Phe Phe
50 55 60
Ser His Leu Lys Glu Leu His Leu Asp Ser Gly His Cys Phe Ile Phe
65 70 75 80
Ile Arg Leu Val Lys Gly Ala Val Cys Leu Ile His Val Gln Ile Arg
85 90 95
Ile Pro Ser Ala Asp Glu Asp Ile Thr Ile Leu Phe Phe Ile Val Ser
100 105 110
Lys His Phe Leu Glu Ser Val Phe Lys Met Leu Gln Trp Ser Gln Met
115 120 125
Thr Leu Ala Thr Val Lys Thr Thr Phe Ile Gly Leu Asn Glu Phe Ile
130 135 140
Cys Ser Pro Ser Thr Leu Pro Ser Gly Lys Lys Asn Gly Leu Ile *

145 150 155 159

<210> 1659
<211> 90
<212> PRT
<213> Homo sapiens

<400> 1659
Met Trp Arg Leu Pro His Ser Gln Phe Ile His Ile Val Ile Leu Pro
1 5 10 15
Leu Lys Val Phe Leu Phe Leu Phe Cys Phe Leu Arg Trp Ser Phe Ser
20 25 30
Leu Val Ala Gln Ala Gly Val Gln Trp Arg Asp Leu Gly Pro Leu Gln
35 40 45
Pro Pro Pro Pro Arg Leu Lys Arg Phe Phe Cys Leu Ser Leu Pro Ser
50 55 60
Ser Trp Asp Tyr Arg His Ser Pro Pro His Pro Ala Asn Phe Tyr Thr
65 70 75 80
Phe Gly Arg Asp Gly Val Ser Pro Cys *
85 89

<210> 1660
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1660
Met Cys Ala His Leu Val Cys Val Lys Trp Cys Leu Val Ile Leu Ile
1 5 10 15
Cys Ile Phe Gln Asn Thr Asn Glu Val Glu Gln Leu Ile Leu Cys Val
20 25 30
Leu Leu Ile Pro Leu Ser Ser Ser Met Thr Asp Leu Phe Leu Ser Leu
35 40 45
Cys Val Cys Val Phe Cys Tyr *
50 55

<210> 1661
<211> 74
<212> PRT
<213> Homo sapiens

<400> 1661
Met Leu Gly Met Ile Ser Met Leu Leu Asn Ala Leu Lys Leu Leu Val
1 5 10 15
Tyr Leu Thr Glu Cys Cys Met Ala Leu Glu Glu Arg Val His Ser Val
20 25 30
Leu Ile Gly Trp Ser Val Ser Phe Lys Arg Ile Gln Arg Gln Leu Asn
35 40 45
Gln Val Gly Leu Ile Glu Phe Phe Lys Met Val Leu Cys Ser Asn Thr
50 55 60

Asp Gly Thr Glu Gly His Tyr Pro Lys *
65 70 73

<210> 1662
<211> 271
<212> PRT
<213> Homo sapiens

<400> 1662
Met Gly Leu Gly Gln Pro Gln Ala Trp Leu Leu Gly Leu Pro Thr Ala
1 5 10 15
Val Val Tyr Gly Ser Leu Ala Leu Phe Thr Thr Ile Leu His Asn Val
20 25 30
Phe Leu Leu Tyr Tyr Val Asp Thr Phe Val Ser Val Tyr Lys Ile Asn
35 40 45
Lys Met Ala Phe Trp Val Gly Glu Thr Val Phe Leu Leu Trp Asn Ser
50 55 60
Leu Asn Asp Pro Leu Phe Gly Trp Leu Ser Asp Arg Gln Phe Leu Ser
65 70 75 80
Ser Gln Pro Arg Ser Gly Ala Gly Leu Ser Ser Arg Ala Val Val Leu
85 90 95
Ala Arg Val Gln Ala Leu Gly Trp His Gly Pro Leu Leu Ala Leu Ser
100 105 110
Phe Leu Ala Phe Trp Val Pro Trp Ala Pro Ala Gly Leu Gln Phe Leu
115 120 125
Leu Cys Leu Cys Leu Tyr Asp Gly Phe Leu Thr Leu Val Asp Leu His
130 135 140
His His Ala Leu Leu Ala Asp Leu Ala Leu Ser Ala His Asp Arg Thr
145 150 155 160
His Leu Asn Phe Tyr Cys Ser Leu Phe Ser Ala Ala Gly Ser Leu Ser
165 170 175
Val Phe Ala Ser Tyr Ala Phe Trp Asn Lys Glu Asp Phe Ser Ser Phe
180 185 190
Arg Ala Phe Cys Val Thr Leu Ala Val Ser Ser Gly Leu Gly Phe Leu
195 200 205
Gly Ala Thr Gln Leu Leu Arg Arg Arg Val Glu Ala Ala Arg Lys Asp
210 215 220
Pro Gly Cys Ser Gly Leu Val Val Asp Ser Gly Leu Cys Gly Glu Glu
225 230 235 240
Leu Leu Val Gly Ser Glu Glu Ala Asp Ser Ile Thr Leu Gly Arg Tyr
245 250 255
Leu Arg Gln Leu Ala Arg His Arg Asn Phe Leu Cys Phe Ser *
260 265 270

<210> 1663
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1663
Met Pro His Ile Gln Thr Leu Leu Arg Thr Leu Phe Ala Ser His Leu
1 5 10 15
Leu Val Ser Leu Trp Gln Ser Glu Pro Met Ala Lys Pro Arg Met Arg

20 25 30
Lys Tyr Asn Thr Ser Ser Glu Tyr Leu Ser Glu Leu Asp Thr Glu Ala
35 40 45
Ser Arg Val Ser *
50 52

<210> 1664
<211> 271
<212> PRT
<213> Homo sapiens

<400> 1664
Met Gly Leu Gly Gln Pro Gln Ala Trp Leu Leu Gly Leu Pro Thr Ala
1 5 10 15
Val Val Tyr Gly Ser Leu Ala Leu Phe Thr Thr Ile Leu His Asn Val
20 25 30
Phe Leu Leu Tyr Tyr Val Asp Thr Phe Val Ser Val Tyr Lys Ile Asn
35 40 45
Lys Met Ala Phe Trp Val Gly Glu Thr Val Phe Leu Leu Trp Asn Ser
50 55 60
Leu Asn Asp Pro Leu Phe Gly Trp Leu Ser Asp Arg Gln Phe Leu Ser
65 70 75 80
Ser Gln Pro Arg Ser Gly Ala Gly Leu Ser Ser Arg Ala Val Val Leu
85 90 95
Ala Arg Val Gln Ala Leu Gly Trp His Gly Pro Leu Leu Ala Leu Ser
100 105 110
Phe Leu Ala Phe Trp Val Pro Trp Ala Pro Ala Gly Leu Gln Phe Leu
115 120 125
Leu Cys Leu Cys Leu Tyr Asp Gly Phe Leu Thr Leu Val Asp Leu His
130 135 140
His His Ala Leu Leu Ala Asp Leu Ala Leu Ser Ala His Asp Arg Thr
145 150 155 160
His Leu Asn Phe Tyr Cys Ser Leu Phe Ser Ala Ala Gly Ser Leu Ser
165 170 175
Val Phe Ala Ser Tyr Ala Phe Trp Asn Lys Glu Asp Phe Ser Ser Phe
180 185 190
Arg Ala Phe Cys Val Thr Leu Ala Val Ser Ser Gly Leu Gly Phe Leu
195 200 205
Gly Ala Thr Gln Leu Leu Arg Arg Arg Val Glu Ala Ala Arg Lys Asp
210 215 220
Pro Gly Cys Ser Gly Leu Val Val Asp Ser Gly Leu Cys Gly Glu Glu
225 230 235 240
Leu Leu Val Gly Ser Glu Glu Ala Asp Ser Ile Thr Leu Gly Arg Tyr
245 250 255
Leu Arg Gln Leu Ala Arg His Arg Asn Phe Leu Cys Phe Ser *
260 265 270

<210> 1665
<211> 284
<212> PRT
<213> Homo sapiens

<400> 1665

Met Asp Glu Lys Ser Asn Lys Leu Leu Leu Ala Leu Val Met Leu Phe
1 5 10 15
Leu Phe Ala Val Ile Val Leu Gln Tyr Val Cys Pro Gly Thr Glu Cys
20 25 30
Gln Leu Leu Arg Leu Gln Ala Phe Ser Ser Pro Val Pro Asp Pro Tyr
35 40 45
Arg Ser Glu Asp Glu Ser Ser Ala Arg Phe Val Pro Arg Tyr Asn Phe
50 55 60
Thr Arg Gly Asp Leu Leu Arg Lys Val Asp Phe Asp Ile Lys Gly Asp
65 70 75 80
Asp Leu Ile Val Phe Leu His Ile Gln Lys Thr Gly Gly Thr Thr Phe
85 90 95
Gly Arg His Leu Val Arg Asn Ile Gln Leu Glu Gln Pro Cys Glu Cys
100 105 110
Arg Val Gly Gln Lys Lys Cys Thr Cys His Arg Pro Gly Lys Arg Glu
115 120 125
Thr Trp Leu Phe Ser Arg Phe Ser Thr Gly Trp Ser Cys Gly Leu His
130 135 140
Ala Asp Trp Thr Glu Leu Thr Ser Cys Val Pro Ser Val Gly Asp Gly
145 150 155 160
Lys Arg Asp Ala Arg Leu Arg Pro Ser Arg Trp Arg Ile Phe His Ile
165 170 175
Leu Tyr Ala Ala Cys Thr Asp Ile Arg Gly Ser Pro Asn Thr Asn Ala
180 185 190
Gly Ala Asn Ser Pro Ser Phe Thr Lys Thr Arg Asn Thr Ser Lys Ser
195 200 205
Trp Lys Asn Phe His Tyr Ile Thr Ile Leu Gln Asp Pro Gly Ala Arg
210 215 220
Ser Leu Ser Glu Trp Arg Pro Val Leu Lys Arg Gly Thr Leu Glu Gly
225 230 235 240
Leu Leu Ala Cys Trp Pro Trp Lys Ala Pro Pro Pro Leu Lys Lys Leu
245 250 255
Ser Thr Trp Tyr Pro Gly Glu Glu Leu Val Trp Leu Ala Pro Leu Gln
260 265 270
Lys Ile Ile Gly Leu Ala Leu Leu Ile Tyr Pro *
275 280 283

<210> 1666
<211> 67
<212> PRT
<213> Homo sapiens

<400> 1666
Met Thr Leu Val Leu Phe Leu Val Leu Ala Leu Met Ile Thr Ile Cys
1 5 10 15
Ile Leu Ser Tyr His Ser His Leu Leu Ile Asn Ser Asn Leu Ile Pro
20 25 30
Val Lys Tyr Arg Asn Phe Pro Ser Ile Leu Leu His Phe Leu His Leu
35 40 45
Trp Leu Ser Phe Cys His Ile Ser His Met His Ile Cys His Asn Leu
50 55 60
Leu Ile *
65 66

<210> 1667
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1667
Met Asn Thr His Trp Asn Ile Leu Pro Val Glu Arg Ser Cys Pro Leu
1 5 10 15
Trp Ile Ser Ser Glu Leu Ser Tyr Cys Ser Ile Lys Leu Leu Phe Ile
20 25 30
Leu Leu Thr Leu His Leu Pro Ala Tyr Leu Ile Leu Pro Gly His Lys
35 40 45
Ile Arg Thr Gln Asp Leu Pro Asn Glu Ala Asn Arg Ala Val Thr Gln
50 55 60
Thr Gly Leu Arg His Ala Leu Tyr Gln Ser Ile Ser Cys Trp *
65 70 75 78

<210> 1668
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1668
Met Trp Gly Leu Leu Ile Pro Cys Ile Leu Gly Cys Met Lys Leu Pro
1 5 10 15
His Asn Leu Leu Met Leu Phe Ser Leu Glu Thr Phe Leu Thr Leu Arg
20 25 30
Phe Ile Leu Asp Ser Phe Tyr Ser Tyr Val Phe Lys Pro Thr Asn Lys
35 40 45
Arg Phe Cys Asn Ile *
50 53

<210> 1669
<211> 119
<212> PRT
<213> Homo sapiens

<400> 1669
Met Met Ala Gly Ile Arg Ala Leu Phe Met Tyr Leu Trp Leu Gln Leu
1 5 10 15
Asp Trp Val Ser Arg Gly Glu Ser Val Gly Leu His Leu Pro Thr Leu
20 25 30
Ser Val Gln Glu Gly Asp Asn Ser Ile Ile Asn Cys Ala Tyr Ser Asn
35 40 45
Ser Ala Ser Asp Tyr Phe Ile Trp Tyr Lys Gln Glu Ser Gly Lys Gly
50 55 60
Pro Gln Phe Ile Ile Asp Ile Arg Ser Asn Met Asp Lys Arg Gln Gly
65 70 75 80
Gln Arg Val Thr Val Leu Leu Asn Lys Thr Val Lys His Leu Ser Leu
85 90 95
Gln Ile Ala Ala Thr Gln Pro Gly Asp Ser Ala Val Tyr Phe Cys Ala
100 105 110

```
Glu Ile Pro Glu Gln Arg  *
        115         118


     <210> 1670
     <211> 116
     <212> PRT
     <213> Homo sapiens


     <400> 1670
Met Cys Leu Leu Cys Cys Glu Cys Leu Phe His Leu Trp Lys Arg Ile
 1               5                  10                  15
Asn Trp Trp Gln Gly Phe Cys Ser Phe Tyr Leu Leu Leu Trp Val Gly
            20                  25                  30
Leu Leu Ser Phe Pro Pro Asp Pro Pro Trp Lys Ser Phe Thr Pro Ala
        35                  40                  45
Ile Leu Phe Leu Ala Trp Gly Thr Gly Ser Ser Pro Gly Arg His Arg
    50                  55                  60
Phe Ser Leu Pro Thr Asp Arg Arg Pro Ser Ala His Ser Pro Phe Leu
65                  70                  75                  80
Ser Thr Leu Gln His Ser Ile Arg Thr Leu Phe His Ser Pro Ile Arg
                85                  90                  95
Ser Ser Arg Phe Ala Phe Val Ser Ser Leu His Ser Tyr Thr Ser Ile
            100                 105                 110
Pro Ser Leu Pro
        115 116


     <210> 1671
     <211> 70
     <212> PRT
     <213> Homo sapiens


     <400> 1671
Met Ser His Cys Gly Leu Leu Phe Leu Val Val Thr Trp Leu Leu Ser
 1               5                  10                  15
Phe Ile Phe Leu Val Cys Lys Met Arg Ile Thr Phe Leu Phe Cys Leu
            20                  25                  30
Leu Thr Val Asp Met Lys Pro Asn Lys Val Leu Tyr Met Lys Cys Phe
        35                  40                  45
Lys Cys Ile Ile Leu Leu Ser Cys Tyr Pro Leu Lys Phe Leu Val Ile
    50                  55                  60
Arg Asn Phe Glu Ile  *
65              69


     <210> 1672
     <211> 263
     <212> PRT
     <213> Homo sapiens


     <400> 1672
Met Arg Val Leu Cys Ala Phe Pro Glu Ala Met Pro Ser Ser Asn Ser
```

1 5 10 15
Arg Pro Pro Ala Cys Leu Ala Pro Gly Ala Leu Tyr Leu Ala Leu Leu
20 25 30
Leu His Leu Ser Leu Ser Ser Gln Ala Gly Asp Arg Arg Pro Leu Pro
35 40 45
Val Asp Arg Ala Ala Gly Leu Lys Glu Lys Thr Leu Ile Leu Leu Asp
50 55 60
Val Ser Thr Lys Asn Pro Val Arg Thr Val Asn Glu Asn Phe Leu Ser
65 70 75 80
Leu Gln Leu Asp Pro Ser Ile Ile His Asp Gly Trp Leu Asp Phe Leu
85 90 95
Ser Ser Lys Arg Leu Val Thr Leu Ala Arg Gly Leu Ser Pro Ala Phe
100 105 110
Leu Arg Phe Gly Gly Lys Arg Thr Asp Phe Leu Gln Phe Gln Asn Leu
115 120 125
Arg Asn Pro Ala Lys Ser Arg Gly Gly Pro Gly Pro Asp Tyr Tyr Leu
130 135 140
Lys Asn Tyr Glu Asp Asp Ile Val Arg Ser Asp Val Ala Leu Asp Lys
145 150 155 160
Gln Lys Gly Cys Lys Ile Ala Gln His Pro Asp Gly Met Leu Glu Pro
165 170 175
Pro Arg Glu Lys Ala Ala Gln Met His Leu Val Leu Leu Lys Glu Gln
180 185 190
Phe Ser Asn Thr Tyr Ser Asn Leu Ile Leu Thr Glu Pro Asn Asn Tyr
195 200 205
Arg Thr Met His Gly Arg Ala Val Asn Gly Ser Gln Leu Gly Lys Asp
210 215 220
Tyr Ile Gln Leu Lys Ser Leu Leu Gln Pro Ile Arg Ile Tyr Ser Arg
225 230 235 240
Ala Ser Leu Tyr Gly Pro Asn Ile Val Arg Pro Arg Lys Asn Val Ile
245 250 255
Ala Leu Leu Asp Gly Leu *
260 262

<210> 1673
<211> 156
<212> PRT
<213> Homo sapiens

<400> 1673
Met Lys Trp Lys Thr Gly Val Ala Ile Phe Val Val Val Val Val Tyr
1 5 10 15
Leu Val Thr Gly Gly Leu Val Phe Arg Ala Leu Glu Gln Pro Phe Glu
20 25 30
Ser Ser Gln Lys Asn Thr Ile Ala Leu Glu Lys Ala Glu Phe Leu Arg
35 40 45
Asp His Val Cys Val Ser Pro Gln Glu Leu Glu Thr Leu Ile Gln His
50 55 60
Ala Leu Asp Ala Asp Asn Ala Gly Val Ser Pro Ile Gly Asn Ser Ser
65 70 75 80
Asn Asn Ser Ser His Trp Asp Leu Gly Ser Ala Phe Phe Phe Ala Gly
85 90 95
Thr Val Ile Thr Thr Ile Gly Tyr Gly Asn Ile Ala Pro Ser Thr Glu
100 105 110
Gly Gly Lys Ile Phe Cys Ile Leu Tyr Ala Ile Phe Gly Phe Pro Leu
115 120 125

Phe Gly Phe Leu Leu Ala Gly Ile Glu Asp Gln Leu Gly Thr Ile Phe
130 135 140
Gly Lys Ser Ile Ala Arg Val Glu Lys Val Phe *
145 150 155

<210> 1674
<211> 83
<212> PRT
<213> Homo sapiens

<400> 1674
Met Cys Cys Val Ile Cys Ser Lys Gln Tyr Val Leu Leu Ser Ile Leu
1 5 10 15
Leu Cys Leu Leu Ala Ser Gly Ser Val Asp Phe Phe Leu Leu Pro His
20 25 30
Ser Val Leu Ala Asp Asp Asp Gly Ile Lys Val Val Lys Val Thr Phe
35 40 45
Asn Lys Gln Asp Ser Leu Val Ile Leu Thr Ile Met Val Ser Leu Thr
50 55 60
Val Ser Phe Pro Gly Leu Cys Thr Cys Gln Ala Gly Thr Gln Asp Thr
65 70 75 80
Tyr Thr *
82

<210> 1675
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1675
Met Val His Cys Leu Ile Cys Met Trp Thr Cys Trp Pro Thr Gly Ala
1 5 10 15
Ile Leu His Arg Val Cys Arg Thr His Trp Pro Arg Gly Val Ser His
20 25 30
Thr His Val Trp Met His Trp Pro Thr Cys Val Val Ser Arg Leu Phe
35 40 45
Val Asp Val Leu Gly *
50 53

<210> 1676
<211> 119
<212> PRT
<213> Homo sapiens

<400> 1676
Met Gly Val Met Ala Met Leu Met Leu Pro Leu Leu Leu Leu Gly Ile
1 5 10 15
Ser Gly Leu Leu Phe Ile Tyr Gln Glu Val Ser Arg Leu Trp Ser Lys
20 25 30
Ser Ala Val Gln Asn Lys Val Val Val Ile Thr Asp Ala Ile Ser Gly

```
        35                  40                  45
Leu Gly Lys Glu Cys Ala Arg Val Phe His Thr Gly Gly Ala Arg Leu
    50                  55                  60
Val Leu Cys Gly Lys Asn Trp Glu Arg Leu Glu Asn Leu Tyr Asp Ala
 65                 70                  75                  80
Leu Ile Ser Val Ala Asp Pro Ser Lys Thr Phe Thr Pro Lys Leu Val
                85                  90                  95
Leu Leu Asp Leu Ser Asp Ile Ser Cys Val Pro His Val Ala Lys Glu
            100                 105                 110
Ala Leu Asp Cys Tyr Gly  *
        115         118
```

```
<210> 1677
<211> 49
<212> PRT
<213> Homo sapiens
```

```
<400> 1677
Met Arg Tyr Lys Cys Val Leu Ser Lys Ile Leu Trp Phe Cys Pro Trp
  1               5                  10                  15
Lys Tyr Val Trp Lys Asn Ser Phe Phe Asn Leu Glu Gly Met Phe Met
            20                  25                  30
Phe Ile Glu Val Thr Cys Arg His Tyr Ser Thr Cys Gly Ile Phe Lys
        35                  40                  45          48
 *
```

```
<210> 1678
<211> 127
<212> PRT
<213> Homo sapiens
```

```
<400> 1678
Met Gln Thr Lys Gly Gly Gln Thr Trp Ala Arg Arg Ala Leu Leu Leu
  1               5                  10                  15
Gly Ile Leu Trp Ala Thr Ala His Leu Pro Leu Ser Gly Thr Ser Leu
            20                  25                  30
Pro Gln Arg Leu Pro Arg Ala Thr Gly Asn Ser Thr Gln Cys Val Ile
        35                  40                  45
Ser Pro Ser Ser Glu Phe Pro Glu Gly Phe Phe Thr Arg Gln Glu Arg
    50                  55                  60
Arg Asp Gly Gly Ile Ile Ile Tyr Phe Leu Ile Ile Val Tyr Met Phe
 65                 70                  75                  80
Met Ala Ile Ser Ile Val Cys Asp Glu Tyr Phe Leu Pro Ser Leu Glu
                85                  90                  95
Ile Ile Ser Glu Tyr Ile Gly Asn Lys Lys Glu Met Gln Val Leu Ile
            100                 105                 110
Pro Gly Arg Ile Val Ser Lys Leu Lys Lys Leu Gly Phe Lys  *
        115                 120                 125 126
```

```
<210> 1679
```

<211> 49
<212> PRT
<213> Homo sapiens

<400> 1679
```
Met Ile Phe Phe Ile Lys Ala Pro Leu Tyr Leu Leu Gln Ser Met Met
 1               5                  10                  15
Asp Cys Leu Tyr Ala Arg Arg Ile Pro Cys Ile Thr Asp Cys Ala Met
            20                  25                  30
Ala Glu Ile Glu Lys Leu Gly Gln Lys Tyr Pro Val Ala Leu Arg Ile
        35                  40                  45
Ala
 49
```

<210> 1680
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1680
```
Met Val Tyr Glu Val Phe Ile Asn Lys Ala Asn Ile Leu Leu Leu Leu
 1               5                  10                  15
Phe Leu Arg Gln Ser Leu Ala Val Leu Pro Arg Leu Glu Cys Ser Gly
            20                  25                  30
Ala Ile Ser Ala Arg Cys Asn Leu His Leu Arg Ile Pro Pro Asp Phe
        35                  40                  45
His Arg Ser Thr Met Gly Gly Gly Gly Gly
    50                  55          58
```

<210> 1681
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1681
```
Met Leu Ser Gly Trp Val Gln Cys Pro Leu Leu Gln Arg Val His Phe
 1               5                  10                  15
Tyr Ala Phe Ser Val Gly Pro Phe His Arg Lys Ile Trp Gly Asp Val
            20                  25                  30
Ser Phe Pro Leu Thr Phe Tyr Phe Lys Asn Leu Gln Thr Gln Lys Ser
        35                  40                  45              48
 *
```

<210> 1682
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1682
Met Thr Gly Leu Phe Leu His His Asn Pro Gly Ile Leu Leu Ala Pro
1 5 10 15
Ser Val Leu Asp Leu Leu Phe Pro Gly Ser His Ile Phe Ile Phe Ser
20 25 30
Leu Phe Leu Ser Leu Cys Pro Cys Phe Gly Asp Thr Ile Leu Val Ala
35 40 45
Pro Ser Asp Lys Val Tyr Lys Asp Thr Phe Ile Ile Lys Ile Tyr Pro
50 55 60
Tyr Cys Ile Phe Glu Asn Phe Phe Thr Phe Leu Phe Thr *
65 70 75 77

<210> 1683
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1683
Met Ser Leu Gly Ser Ile Asn His Phe Leu Phe Phe Ile Gln Leu Leu
1 5 10 15
Val Leu Lys Asn Ser Tyr Cys Met Leu Leu Lys Met Lys Gln Asn Lys
20 25 30
Lys Leu Lys Lys Ile Met Cys Leu Leu Phe Leu Met Leu Ser Ser Tyr
35 40 45
His Leu Ile *
50 51

<210> 1684
<211> 165
<212> PRT
<213> Homo sapiens

<400> 1684
Met Pro Ala Pro Pro Leu Pro Gly Gly Trp Asn Thr Trp Gly Pro Ser
1 5 10 15
Leu Ser Leu Pro Leu Leu Leu Leu Gly Ala Val Ala Met Ala Leu Gly
20 25 30
Val Arg Pro Pro Gly Gln Val Gly Leu Ser Pro Ile Ala Thr Ala Ser
35 40 45
Thr Val Gly Val Pro Arg Cys Leu Gln Thr Ala Phe Arg Gly Asp Ala
50 55 60
Gly Trp His Ser Cys Ala Gln Gln Gly Ala Cys Val Ala Leu His Pro
65 70 75 80
Ser Glu Arg Arg Leu Gly Ile Ser Asp Glu Ala His Ser Arg Ser Arg
85 90 95
Trp Gly Gly Glu Asp Ser Pro Ser Pro Leu Thr Gly Pro Pro Leu Ser
100 105 110
Pro Ser Pro Pro Asp Cys Leu Ser Leu Pro Arg Leu Thr Pro Leu Arg
115 120 125
Leu Pro Pro Pro Pro Phe Pro Phe Leu Gly Pro Ile Pro Ser Leu Pro
130 135 140
Pro Pro Pro Ser Pro Pro Pro Gln Pro Pro Ala Thr Ala Pro Pro Pro
145 150 155 160

```
Ser Leu Arg Phe   *
            164


     <210> 1685
     <211> 153
     <212> PRT
     <213> Homo sapiens


     <400> 1685
Met Gly Thr Ala Ala Leu Gly Pro Val Trp Ala Ala Leu Leu Leu Phe
 1               5                  10                  15
Leu Leu Met Cys Glu Ile Pro Met Val Glu Leu Thr Phe Asp Arg Ala
            20                  25                  30
Val Ala Ser Gly Cys Gln Arg Cys Cys Asp Ser Glu Asp Pro Leu Asp
        35                  40                  45
Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg Pro His Ala Leu
    50                  55                  60
Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile Leu Lys Ala Gln Arg
65                  70                  75                  80
Ala Gln His His Ala Glu Pro Glu Cys Asp Ala Gly Pro Gly Leu Arg
                85                  90                  95
Gly Pro Arg Leu Gly Ala Ala Leu Gln Ala Pro Ala Arg Glu Arg His
            100                 105                 110
Leu Gln Gln Arg Leu Arg His Leu His His Leu Gln Arg Pro Pro His
        115                 120                 125
Gln Gly Arg Gly Arg Leu Arg Ala Ser Gly Pro Pro Ser Arg Leu Glu
    130                 135                 140
Ser Ser Ala Asp Pro Ala Pro Ala   *
145                 150     152


     <210> 1686
     <211> 141
     <212> PRT
     <213> Homo sapiens


     <400> 1686
Met Arg Arg Thr Ala Phe Ile Leu Gly Ser Gly Leu Leu Ser Phe Val
 1               5                  10                  15
Ala Phe Trp Asn Ser Val Thr Trp His Leu Gln Arg Phe Trp Gly Ala
            20                  25                  30
Ser Gly Tyr Phe Trp Gln Ala Gln Trp Glu Arg Leu Leu Thr Thr Phe
        35                  40                  45
Glu Gly Lys Glu Trp Ile Leu Phe Phe Ile Gly Ala Ile Gln Val Pro
    50                  55                  60
Cys Leu Phe Phe Trp Ser Phe Asn Gly Leu Leu Leu Val Val Asp Thr
65                  70                  75                  80
Thr Gly Lys Pro Asn Phe Ile Ser Arg Tyr Arg Ile Gln Val Gly Lys
                85                  90                  95
Asn Glu Pro Val Asp Pro Val Lys Leu Arg Gln Ser Ile Arg Thr Val
            100                 105                 110
Leu Phe Asn Gln Cys Met Ile Ser Phe Pro Met Gly Gly Leu Pro Leu
        115                 120                 125
Ser Leu Pro Gln Met Val Glu Arg Pro Leu Thr Pro   *
```

130 135 140

<210> 1687
<211> 61
<212> PRT
<213> Homo sapiens

<400> 1687
Met Leu Thr Glu Leu Leu Leu Leu Cys Val Leu Val Leu Cys Val Phe
1 5 10 15
Met Ser Arg Gly Ser Cys Leu Phe Ala Thr Ile Arg Glu Phe Trp Pro
20 25 30
Pro Trp Val Gly Cys Gly Arg Gly Glu Asn Pro Ser Val Gly Thr Val
35 40 45
Asp Pro Ser Cys Arg Leu Cys Ala Pro Gly His Val *
50 55 60

<210> 1688
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1688
Met Val Ala Ala Thr Pro Pro Gly Ile Ala Arg Trp Ala Leu Val Ile
1 5 10 15
Ser Phe Pro Pro Val Thr Pro Thr Ala Pro His Met Cys Ala Ala Gln
20 25 30
Pro Trp Gly Arg His Gly Ser Ala Glu Gly Thr Thr Gln Leu Pro Ala
35 40 45
Pro Arg Ser Ser Pro Ser Cys Gln Ser Trp Asp Lys Leu Leu Leu Leu
50 55 60
Leu Leu Glu *
65 67

<210> 1689
<211> 74
<212> PRT
<213> Homo sapiens

<400> 1689
Met Ala Ala Thr Met Val Ser Ile Ala Ser Phe Arg Leu Phe Leu Met
1 5 10 15
Ser Cys Thr Leu Val Ala Phe Ser Pro Ser Leu Leu Leu Leu Ala Ala
20 25 30
Cys Gly Ser Ser Ser Pro Pro Ser Pro Leu Asn Pro Leu Thr Cys Arg
35 40 45
Ile Leu Ile Cys Phe Thr Met Val Leu Leu Pro Asp Ser Pro Ala Pro
50 55 60
Ser Ser Ser Arg Arg Cys Val Ala Arg *
65 70 73

<210> 1690
<211> 114
<212> PRT
<213> Homo sapiens

<400> 1690
Met His Met Cys Ala Phe Leu His Val Trp Thr Cys Ala Cys Met His
1 5 10 15
Leu Cys Val Cys Val Cys Ala Glu Thr Gly Lys Gly Val Lys Val Leu
20 25 30
Val Arg Glu Pro Gly Ser Phe Leu Phe Pro Asn Leu Ser Cys Ser Lys
35 40 45
Glu Gly Trp Gly Trp Gly Gln Pro Leu Leu Lys Val Ile Gly Glu Glu
50 55 60
Arg Phe Ser Asp Ser Glu Val Thr Ala Ser Val Ala Gln Ala Val Ser
65 70 75 80
Leu Val Thr Val Ile Leu Gln Phe Ser Asp Pro His Val Ser Phe Arg
85 90 95
Gly Lys Arg Lys Lys Gly Thr Leu Trp Trp Val Leu Gly Gly Lys Arg
100 105 110
Lys *
113

<210> 1691
<211> 69
<212> PRT
<213> Homo sapiens

<400> 1691
Met Ala Phe Leu Leu Ser Thr Leu Leu Asn His Tyr Leu Ala Cys Lys
1 5 10 15
His Ser Ser Glu Leu Trp Leu Gln Ser Ser Leu Asn Asn Leu Gly Lys
20 25 30
Lys Lys Asp Lys Ala Tyr Ile Phe Thr Val Leu Ala Leu Lys His Ile
35 40 45
Pro Gln Met Pro Leu Arg Ile Tyr Phe Val Leu Gly Gln Ser Trp Trp
50 55 60
Leu Met Pro Val Ser
65 69

<210> 1692
<211> 103
<212> PRT
<213> Homo sapiens

<400> 1692
Met Leu Gly Pro Thr Val Phe Asn Ile Lys Phe Val Phe Leu Ile Thr
1 5 10 15
Ala Leu Gly Ala Leu Pro Ser Ser Leu Pro His Ala His Ser Ala Ala

```
                20                  25                  30
Trp Thr Leu Leu Pro Gly Pro Pro Ala Gln Gln His Ser Thr Arg Leu
            35                  40                  45
Trp Thr Phe Ser Asn Met Ala Gly Val Glu Leu Cys Pro Gly Pro Gln
        50                  55                  60
Pro Ala Gly Pro Ala Ala Pro Val Gly Arg Thr Pro Pro Val Leu Ser
65                  70                  75                      80
Ala Phe Thr Thr Thr Ser Ser Phe Gly Ser Gly Cys Gly Val Thr Ser
                85                  90                  95
Ser Arg Glu Leu Pro Arg Arg
            100         103
```

<210> 1693
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1693

```
Met Gly Arg Phe Leu Asp Glu Gln Trp Val Tyr Phe Ile Ile Leu Leu
1               5                   10                  15
Leu Leu Phe Phe Phe Arg Asp Ser Leu Ala Leu Ser Pro Arg Leu Glu
            20                  25                  30
Cys Ser Gly Ala Ile Ser Val His Ser Lys Leu Arg Leu Pro Gly Ser
        35                  40                  45              48
```

<210> 1694
<211> 92
<212> PRT
<213> Homo sapiens

<400> 1694

```
Met Ile Phe Ala Cys Glu Cys Val Leu Arg Leu Leu Leu Ile Leu Asn
1               5                   10                  15
Val Ser Phe Leu Gly Ala Val Ser Glu Glu Thr Thr Asn Ala Leu Glu
            20                  25                  30
Thr Trp Gly Ala Leu Arg Gln Asp Ile Asn Leu Asp Ile Pro Ser Phe
        35                  40                  45
Leu Leu Arg Glu His Ile Asp Glu Leu Ile Cys Asp Lys Thr Leu Asp
    50                  55                  60
Ser Lys Lys Ile Ala His Phe Arg Ala Glu Lys Glu Thr Phe Ser Glu
65                  70                  75                      80
Lys Asp Thr Tyr Cys Tyr Leu Lys Met Glu Leu  *
                85                  90  91
```

<210> 1695
<211> 83
<212> PRT
<213> Homo sapiens

<400> 1695
Met Ala Val Gln Gln Gln Phe Ile Ile Val Val Leu Arg Leu Val Phe
1 5 10 15
Pro Val Ala Gly Thr Thr Arg Ala Pro Leu His Trp Val Gly Ala Ile
20 25 30
Pro Gly Trp Glu Trp Pro Pro Gly Asp Asp Ala Tyr Pro Ser Leu Leu
35 40 45
Ala Pro Ser Gln His Pro Tyr Ser Gly Glu Ala Leu Cys Leu Leu Leu
50 55 60
Leu Pro Ser Ile Val Leu Leu Glu Ser Cys Arg Lys Val Met Glu Arg
65 70 75 80
Gly Leu *
82

<210> 1696
<211> 159
<212> PRT
<213> Homo sapiens

<400> 1696
Met Leu Trp Leu Phe Gln Ser Leu Leu Phe Val Phe Cys Phe Gly Pro
1 5 10 15
Gly Asn Val Val Ser Gln Ser Ser Leu Thr Pro Leu Met Val Asn Gly
20 25 30
Ile Leu Gly Glu Ser Val Thr Leu Pro Leu Glu Phe Pro Ala Gly Glu
35 40 45
Lys Val Asn Phe Ile Thr Trp Leu Phe Asn Glu Thr Ser Leu Ala Phe
50 55 60
Ile Val Pro His Glu Thr Lys Ser Pro Glu Ile His Val Thr Asn Pro
65 70 75 80
Lys Gln Gly Lys Arg Leu Asn Phe Thr Gln Ser Tyr Ser Leu Gln Leu
85 90 95
Ser Asn Leu Lys Met Glu Asp Thr Gly Ser Tyr Arg Ala Gln Ile Ser
100 105 110
Thr Lys Thr Ser Ala Lys Leu Ser Ser Tyr Thr Leu Arg Ile Leu Thr
115 120 125
Leu Tyr Pro Ile Val Gly Asn Gly Ile Trp Gly Asn Lys Asn Phe Leu
130 135 140
Thr Thr Leu Ala Arg Gly Asn Val Lys Leu Asp Gly Leu His Glu
145 150 155 159

<210> 1697
<211> 105
<212> PRT
<213> Homo sapiens

<400> 1697
Met Glu Pro Arg Leu Phe Cys Trp Thr Thr Leu Phe Leu Leu Ala Gly
1 5 10 15
Trp Cys Leu Pro Gly Leu Pro Cys Pro Ser Arg Cys Leu Cys Phe Lys
20 25 30
Ser Thr Val Arg Cys Met His Leu Met Leu Asp His Ile Pro Gln Val

```
        35                  40                  45
Pro Gln Gln Thr Thr Val Leu Asp Leu Arg Phe Asn Arg Ile Arg Glu
    50                  55                  60
Ile Pro Gly Ser Ala Phe Lys Lys Leu Lys Asn Leu Asn Thr Leu Tyr
65                  70                  75                  80
Leu Tyr Lys Asn Glu Ile His Ala Leu Asp Lys Gln Thr Phe Lys Gly
                85                  90                  95
Leu Ile Ser Leu Glu His Leu Tyr Ile
            100                 105
```

<210> 1698
<211> 195
<212> PRT
<213> Homo sapiens

<400> 1698

```
Met Pro Ser Trp Ile Gly Ala Val Ile Leu Pro Leu Leu Gly Leu Leu
 1               5                  10                  15
Leu Ser Leu Pro Ala Gly Ala Asp Val Lys Ala Arg Ser Cys Gly Glu
            20                  25                  30
Val Arg Gln Ala Tyr Gly Ala Lys Gly Phe Ser Leu Ala Asp Ile Pro
        35                  40                  45
Tyr Gln Glu Ile Ala Gly Glu His Leu Arg Ile Cys Pro Gln Glu Tyr
    50                  55                  60
Thr Cys Cys Thr Thr Glu Met Glu Asp Lys Leu Ser Gln Gln Ser Lys
65                  70                  75                  80
Leu Glu Phe Glu Asn Leu Val Glu Glu Thr Ser His Phe Val Arg Thr
                85                  90                  95
Thr Phe Val Ser Arg His Lys Lys Phe Asp Glu Phe Phe Arg Glu Leu
            100                 105                 110
Leu Glu Asn Ala Glu Lys Ser Leu Asn Asp Met Phe Val Arg Thr Tyr
        115                 120                 125
Gly Met Leu Tyr Met Gln Asn Ser Glu Val Phe Gln Asp Leu Phe Thr
    130                 135                 140
Glu Leu Lys Arg Tyr Tyr Thr Gly Gly Asn Val Asn Leu Glu Glu Met
145                 150                 155                 160
Leu Asn Asp Phe Trp Ala Arg Leu Leu Glu Arg Met Phe Gln Leu Ile
                165                 170                 175
Asn Pro Gln Tyr Pro Phe Ser Glu Gly Phe Leu Gly Met Cys Glu Gln
            180                 185                 190
Ile Pro  *
    194
```

<210> 1699
<211> 97
<212> PRT
<213> Homo sapiens

<400> 1699

```
Met Asp Ser Pro Trp Ala Gly Leu Leu Trp Leu Leu Pro Thr Leu Trp
 1               5                  10                  15
Ser Ser Phe Pro Ala Pro Ala Cys Trp Pro Ser Ser Ser Ser Ser Ser
            20                  25                  30
```

Pro Val Cys Ala Ala Asn Gly Ala Met Ser Ala Ser Arg Asn Leu Arg
35 40 45
Thr Leu Lys Gly Arg Thr Ala Pro Gly Ser Thr Leu Pro Leu Arg Arg
50 55 60
Arg Pro Pro Pro His Ser Arg Cys Leu Met Ser Thr Phe Ser Arg Trp
65 70 75 80
Leu Arg Ser Pro Cys Gln Cys Leu Pro Arg Ser Leu His Thr Gln Thr
85 90 95 96
*

<210> 1700
<211> 129
<212> PRT
<213> Homo sapiens

<400> 1700
Met Gly Trp Ala Pro Leu Leu Leu Thr Leu Leu Ala His Cys Thr Gly
1 5 10 15
Ser Trp Ala Gln Ser Val Leu Thr Gln Pro Pro Ser Glu Ser Glu Ala
20 25 30
Pro Gly Gln Trp Val Asn Ile Ser Cys Thr Gly Ser Gly Ser Asn Leu
35 40 45
Gly Ala Gly Phe Asp Val Gln Trp Tyr Gln Leu Ile Pro Gly Thr Ala
50 55 60
Pro Lys Leu Leu Ile Phe Asn Asn Asn Arg Gln Pro Ser Gly Val Pro
65 70 75 80
Asp Arg Phe Ser Ala Ser Lys Ser Gly Thr Ser Ala Ser Leu Thr Ile
85 90 95
Asn Asp Leu Gln Pro Glu Asp Glu Ser Glu Tyr Tyr Cys Leu Ala Met
100 105 110
Thr Ala Ala Ser Leu Val Ser Ser Glu Leu Gly Pro Lys Ser Pro Ala
115 120 125 128
*

<210> 1701
<211> 219
<212> PRT
<213> Homo sapiens

<400> 1701
Met Arg Thr His Thr Arg Gly Ala Pro Ser Val Phe Phe Ile Tyr Leu
1 5 10 15
Leu Cys Phe Val Ser Ala Tyr Ile Thr Asp Glu Asn Pro Glu Val Met
20 25 30
Ile Pro Phe Thr Asn Ala Asn Tyr Asp Ser His Pro Met Leu Tyr Phe
35 40 45
Ser Arg Ala Glu Val Ala Glu Leu Gln Leu Arg Ala Ala Ser Ser His
50 55 60
Glu His Ile Ala Ala Arg Leu Thr Glu Ala Val His Thr Met Leu Ser
65 70 75 80
Ser Pro Leu Glu Tyr Leu Pro Pro Trp Asp Pro Lys Asp Tyr Ser Ala

```
                    85                            90                            95
Arg Trp Asn Glu Ile Phe Gly Asn Asn Leu Gly Ala Leu Ala Met Phe
                100                           105                           110
Cys Val Leu Tyr Pro Glu Asn Ile Glu Ala Arg Asp Met Ala Lys Asp
            115                           120                           125
Tyr Met Glu Arg Met Ala Ala Gln Pro Ser Trp Leu Val Lys Asp Ala
        130                           135                           140
Pro Trp Asp Glu Val Pro Leu Ala His Ser Leu Val Gly Phe Ala Thr
145                           150                           155                           160
Ala Tyr Asp Phe Leu Tyr Asn His Leu Ser Lys Thr Gln Gln Glu Lys
                    165                           170                           175
Phe Leu Glu Val Ile Ala Asn Ala Ser Gly Tyr Met Phe Val Thr Leu
                180                           185                           190
Ile Leu Gly Ala Asp Gly Asp Ser Asn Thr Cys Thr Ile Ile Ser Pro
            195                           200                           205
Pro Thr Val Trp Leu Cys Ser Arg Glu Ala  *
        210                           215         218
```

<210> 1702
<211> 86
<212> PRT
<213> Homo sapiens

<400> 1702

```
Met Glu Gln Leu Leu Gly Ile Lys Leu Gly Cys Leu Phe Ala Leu Leu
 1               5                            10                            15
Ala Leu Thr Leu Gly Cys Gly Leu Thr Pro Ile Cys Phe Lys Trp Phe
                20                            25                            30
Gln Ile Asp Ala Ala Arg Gly His His Arg Leu Val Leu Arg Leu Leu
            35                            40                            45
Gly Cys Ile Ser Ala Gly Val Phe Leu Gly Ala Gly Phe Met His Met
        50                            55                            60
Thr Ala Glu Ala Leu Glu Glu Ile Glu Ser Gln Ile Gln Lys Phe Met
 65                           70                            75                            80
Val Gln Ile Ser Lys  *
                    85
```

<210> 1703
<211> 229
<212> PRT
<213> Homo sapiens

<400> 1703

```
Met Leu Ser Met Leu Arg Thr Met Thr Arg Leu Cys Phe Leu Leu Phe
 1               5                            10                            15
Phe Ser Val Ala Thr Ser Gly Cys Ser Ala Ala Ala Ala Ser Ser Leu
                20                            25                            30
Glu Met Leu Ser Arg Glu Phe Glu Thr Cys Ala Phe Ser Phe Ser Ser
            35                            40                            45
Leu Pro Arg Ser Cys Lys Glu Ile Lys Glu Arg Cys His Ser Ala Gly
        50                            55                            60
Asp Gly Leu Tyr Phe Leu Arg Thr Lys Asn Gly Val Val Tyr Gln Thr
 65                           70                            75                            80
```

```
Phe Cys Asp Met Thr Ser Gly Gly Gly Gly Trp Thr Leu Val Ala Ser
                85                  90                  95
Val His Glu Asn Asp Met His Gly Lys Cys Thr Val Gly Asp Arg Trp
            100                 105                 110
Ser Ser Gln Gln Gly Asn Lys Ala Asp Tyr Pro Glu Gly Asp Gly Asn
        115                 120                 125
Trp Ala Asn Tyr Asn Thr Phe Gly Ser Ala Glu Ala Ala Thr Ser Asp
    130                 135                 140
Asp Tyr Lys Asn Pro Gly Tyr Tyr Asp Ile Gln Ala Lys Asp Leu Gly
145                 150                 155                 160
Ile Trp His Val Pro Asn Lys Ser Pro Met Gln His Trp Arg Asn Ser
                165                 170                 175
Ala Leu Leu Arg Tyr Arg Thr Asn Thr Gly Phe Leu Gln Arg Leu Gly
            180                 185                 190
His Asn Leu Phe Gly Ile Tyr Gln Lys Tyr Pro Val Lys Tyr Arg Ser
        195                 200                 205
Gly Lys Cys Trp Asn Asp Asn Gly Pro Ala Ile Pro Trp Val Tyr Asp
    210                 215                 220
Phe Gly Glu Ala  *
225         228
```

<210> 1704
<211> 202
<212> PRT
<213> Homo sapiens

<400> 1704

```
Met Val Phe Pro Val Met Tyr Asn Leu Ile Ile Leu Val Cys Arg Ala
 1               5                  10                  15
Cys Phe Pro Asp Leu Gln His Gly Tyr Leu Val Ala Trp Leu Val Leu
            20                  25                  30
Asp Tyr Thr Ser Asp Leu Leu Tyr Leu Leu Asp Met Val Val Arg Phe
        35                  40                  45
His Thr Gly Phe Leu Glu Gln Gly Ile Leu Val Val Asp Lys Gly Arg
    50                  55                  60
Ile Ser Ser Arg Tyr Val Arg Thr Trp Ser Phe Phe Leu Asp Leu Ala
65                  70                  75                  80
Ser Leu Met Pro Thr Asp Val Val Tyr Val Arg Leu Gly Pro His Thr
                85                  90                  95
Pro Thr Leu Arg Leu Asn Arg Phe Leu Arg Ala Pro Arg Leu Phe Glu
            100                 105                 110
Ala Phe Asp Arg Thr Glu Thr Arg Thr Ala Tyr Pro Asn Ala Phe Cys
        115                 120                 125
Ile Gly Lys Leu Met Leu Tyr Ile Phe Gly Arg Ile His Trp Asn Asn
    130                 135                 140
Cys Leu Tyr Phe Ser Leu Ser Arg Tyr Leu Gly Phe Gly Arg Glu Pro
145                 150                 155                 160
Met Gly Val Pro Arg Thr Pro Ala Pro Thr Trp Val Leu Thr Ala Arg
                165                 170                 175
Gly Gly Pro Val Thr Ser Tyr Lys Leu Phe Asn Phe Phe His Pro Leu
            180                 185                 190
Asp Thr Trp Ile Ile Gln Gly Gly Glu  *
        195                 200 201
```

<210> 1705
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1705
Met Gly Leu Leu Gly Val Leu Trp Asn Thr Thr Leu His Met Cys Arg
1 5 10 15
Met Arg Leu Gln Asp Thr Gly Gln Lys Ile Arg Thr Gly Ser Cys Glu
20 25 30
Leu His Gly Ser Gln Ser Ser His Ser Thr Gly Asn Leu Arg Val Leu
35 40 45
Pro Ser His Asn Gly Glu Thr Leu His *
50 55 57

<210> 1706
<211> 55
<212> PRT
<213> Homo sapiens

<400> 1706
Met Gly Asp Tyr Arg Asn Val Arg Leu Leu Gly Ser Phe Ser Phe Ile
1 5 10 15
Ser Val Thr Ile Ser Arg Val Ile Phe Leu Leu Ser Leu Leu Gln Pro
20 25 30
Ser Gly Val Gly Ile Leu Phe Ala Asp Ser Gly Gly Thr Gly Tyr Thr
35 40 45
His His Cys Leu Trp Val *
50 54

<210> 1707
<211> 139
<212> PRT
<213> Homo sapiens

<400> 1707
Met Leu Glu Cys Ala Phe Ile Val Leu Trp Leu Gln Leu Gly Trp Leu
1 5 10 15
Ser Gly Glu Asp Gln Val Thr Gln Ser Pro Glu Ala Leu Arg Leu Gln
20 25 30
Glu Gly Glu Ser Ser Ser Leu Asn Cys Ser Tyr Thr Val Ser Gly Leu
35 40 45
Arg Gly Leu Phe Trp Tyr Arg Gln Asp Pro Gly Lys Gly Pro Glu Phe
50 55 60
Leu Phe Thr Leu Tyr Ser Ala Gly Glu Glu Lys Glu Lys Glu Arg Leu
65 70 75 80
Lys Ala Thr Leu Thr Lys Lys Glu Ser Phe Leu His Ile Thr Ala Pro
85 90 95
Lys Pro Glu Asp Ser Ala Thr Tyr Leu Cys Ala Val Gln Ala Gln Phe
100 105 110
His Ser Gly Gly Gly Ala Asp Gly Leu Thr Phe Gly Lys Gly Thr Arg
115 120 125

Leu Lys Val Leu Ala Leu Tyr Pro Glu Pro *
130 135 138

<210> 1708
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1708
Met Gly Pro Arg Phe Val Ser Thr Leu Pro Phe Ser Pro Ser Ala Ala
1 5 10 15
Trp Cys Ala Cys Glu Ala Gly Gly Gly Leu Arg Arg Glu Val Ala His
20 25 30
Ala Gln Arg Ala Ala Ser Thr Ala Pro Thr Ala His Met Gln Asn Ser
35 40 45
Thr Leu Ile Gly Leu Asn Leu Ser Arg Gly *
50 55 58

<210> 1709
<211> 81
<212> PRT
<213> Homo sapiens

<400> 1709
Met Arg Leu Pro Trp Glu Leu Leu Val Leu Gln Ser Phe Ile Leu Cys
1 5 10 15
Leu Ala Asp Asp Ser Thr Leu His Gly Pro Ile Phe Ile Gln Glu Pro
20 25 30
Ser Pro Val Met Phe Pro Leu Asp Ser Glu Glu Lys Lys Ala Lys Leu
35 40 45
Asn Cys Glu Asp Lys Gly Asp Pro Lys Pro His Ile Arg Trp Lys Leu
50 55 60
Asn Gly Ala Asp Ala Asp Thr Gly Met Glu Phe Leu Leu Gln Arg Cys
65 70 75 80
*

<210> 1710
<211> 399
<212> PRT
<213> Homo sapiens

<400> 1710
Met Leu Arg Leu Tyr Val Leu Val Met Gly Val Ser Ala Phe Thr Leu
1 5 10 15
Gln Pro Ala Ala His Thr Gly Ala Ala Arg Ser Cys Arg Phe Arg Gly
20 25 30
Arg His Tyr Lys Arg Glu Phe Arg Leu Glu Gly Glu Pro Val Ala Leu
35 40 45
Arg Cys Pro Gln Val Pro Tyr Trp Leu Trp Ala Ser Val Ser Pro Arg

```
    50                  55                  60
Ile Asn Leu Thr Trp His Lys Asn Asp Ser Ala Arg Thr Val Pro Gly
 65                 70                  75                  80
Glu Glu Glu Thr Arg Met Trp Ala Gln Asp Gly Ala Leu Trp Leu Leu
                85                  90                  95
Pro Ala Leu Gln Glu Asp Ser Gly Thr Tyr Val Cys Thr Thr Arg Asn
            100                 105                 110
Ala Ser Tyr Cys Asp Lys Met Ser Ile Glu Leu Arg Val Phe Glu Asn
        115                 120                 125
Thr Asp Ala Phe Leu Pro Phe Ile Ser Tyr Pro Gln Ile Leu Thr Leu
    130                 135                 140
Ser Thr Ser Gly Val Leu Val Cys Pro Asp Leu Ser Glu Phe Thr Arg
145                 150                 155                 160
Asp Lys Thr Asp Val Lys Ile Gln Trp Tyr Lys Asp Ser Leu Leu Leu
                165                 170                 175
Asp Lys Asp Asn Glu Lys Phe Leu Ser Val Arg Gly Thr Thr His Leu
            180                 185                 190
Leu Val His Asp Val Ala Leu Glu Asp Ala Gly Tyr Tyr Arg Cys Val
        195                 200                 205
Leu Thr Phe Ala His Glu Gly Gln Gln Tyr Asn Ile Thr Arg Ser Ile
    210                 215                 220
Glu Leu Arg Ile Lys Lys Lys Lys Glu Glu Thr Ile Pro Val Ile Ile
225                 230                 235                 240
Ser Pro Leu Lys Thr Ile Ser Ala Ser Leu Gly Ser Arg Leu Thr Ile
                245                 250                 255
Pro Cys Lys Val Phe Leu Gly Thr Gly Thr Pro Leu Thr Thr Met Leu
            260                 265                 270
Trp Trp Thr Ala Asn Asp Thr His Ile Glu Ser Ala Tyr Pro Gly Gly
        275                 280                 285
Arg Val Thr Glu Gly Pro Arg Gln Glu Tyr Ser Glu Asn Asn Glu Asn
    290                 295                 300
Tyr Ile Glu Val Pro Leu Ile Phe Asp Pro Val Thr Arg Glu Asp Leu
305                 310                 315                 320
His Met Asp Phe Lys Cys Val Val His Asn Thr Leu Ser Phe Gln Thr
                325                 330                 335
Leu Arg Thr Thr Val Lys Glu Ala Ser Ser Thr Phe Ser Trp Gly Ile
            340                 345                 350
Val Leu Ala Pro Leu Ser Leu Ala Phe Leu Val Leu Gly Gly Ile Trp
        355                 360                 365
Met His Arg Arg Cys Lys His Arg Thr Gly Lys Ala Asp Gly Leu Thr
    370                 375                 380
Val Leu Trp Pro His His Gln Asp Phe Gln Ser Tyr Pro Lys  *
385                 390                 395         398
```

<210> 1711
<211> 254
<212> PRT
<213> Homo sapiens

<400> 1711

```
Met Ala Met Gly Val Pro Arg Val Ile Leu Leu Cys Leu Phe Gly Ala
  1               5                  10                  15
Ala Leu Cys Leu Thr Gly Ser Gln Ala Leu Gln Cys Tyr Ser Phe Glu
             20                  25                  30
His Thr Tyr Phe Gly Pro Phe Asp Leu Arg Ala Met Lys Leu Pro Ser
         35                  40                  45
```

```
Ile Ser Cys Pro His Glu Cys Phe Glu Ala Ile Leu Ser Leu Asp Thr
    50                  55                  60
Gly Tyr Arg Ala Pro Val Thr Leu Val Arg Lys Gly Cys Trp Thr Gly
65                  70                  75                  80
Pro Pro Ala Gly Gln Thr Gln Ser Asn Ala Asp Ala Leu Pro Pro Asp
                85                  90                  95
Tyr Ser Val Val Arg Gly Cys Thr Thr Asp Lys Cys Asn Ala His Leu
            100                 105                 110
Met Thr His Asp Ala Leu Pro Asn Leu Ser Gln Ala Pro Asp Pro Pro
        115                 120                 125
Thr Leu Ser Gly Leu Glu Cys Tyr Ala Cys Ile Gly Val His Gln Asp
    130                 135                 140
Asp Cys Ala Ile Gly Arg Ser Arg Arg Val Gln Cys His Gln Asp Gln
145                 150                 155                 160
Thr Ala Cys Phe Gln Gly Asn Gly Arg Met Thr Val Gly Asn Phe Ser
                165                 170                 175
Val Pro Val Tyr Ile Arg Thr Cys His Arg Ala Leu Leu His His Leu
            180                 185                 190
Met Gly Thr Thr Ser Pro Trp Thr Ala Ile Gly Pro Pro Arg Gly Ser
        195                 200                 205
Cys Cys Glu Gly Tyr Leu Cys Asn Arg Lys Ser Met Thr Gln Pro Phe
    210                 215                 220
Thr Ser Ala Ser Ala Thr Thr Pro Pro Arg Ala Leu Gln Val Leu Ala
225                 230                 235                 240
Leu Leu Leu Pro Val Leu Leu Leu Val Gly Leu Ser Ala  *
                245                 250         253
```

```
<210> 1712
<211> 124
<212> PRT
<213> Homo sapiens
```

```
<400> 1712
Met Thr Trp Leu Leu Val Ala Tyr Ala Asp Phe Val Val Thr Phe Val
  1               5                  10                  15
Met Leu Leu Pro Ser Lys Asp Phe Trp Tyr Ser Val Val Asn Gly Val
            20                  25                  30
Ile Phe Asn Cys Leu Ala Val Leu Ala Leu Ser Ser His Leu Arg Thr
        35                  40                  45
Met Leu Thr Asp Pro Glu Lys Ser Ser Asp Cys Arg Pro Ser Ala Cys
    50                  55                  60
Thr Val Lys Thr Gly Leu Asp Pro Thr Leu Val Gly Ile Cys Gly Glu
65                  70                  75                  80
Gly Thr Glu Ser Val Gln Ser Leu Leu Leu Gly Ala Val Pro Lys Gly
                85                  90                  95
Asn Ala Thr Lys Glu Tyr Met Asp Glu Leu Ala Ala Glu Ala Arg Gly
            100                 105                 110
Ser His Leu Gln Val Pro Gln Val Leu Leu Tyr  *
        115                 120         123
```

```
<210> 1713
<211> 214
<212> PRT
<213> Homo sapiens
```

<400> 1713
Met Leu His Leu Val Phe Ile Leu Pro Ser Leu Met Leu Leu Ile Pro
1 5 10 15
His Ile Leu Leu Glu Asn Phe Ala Ala Ala Ile Pro Gly His Arg Cys
20 25 30
Trp Val His Met Leu Asp Asn Asn Thr Gly Ser Gly Asn Glu Thr Gly
35 40 45
Ile Leu Ser Glu Asp Ala Leu Leu Arg Ile Ser Ile Pro Leu Asp Ser
50 55 60
Asn Leu Arg Pro Glu Lys Cys Arg Arg Phe Val His Pro Gln Trp Gln
65 70 75 80
Leu Leu His Leu Asn Gly Thr Ile His Ser Thr Ser Glu Ala Asp Thr
85 90 95
Glu Pro Cys Val Asp Gly Trp Val Tyr Asp Gln Ser Tyr Phe Pro Ser
100 105 110
Thr Ile Val Thr Lys Trp Asp Leu Val Cys Asp Tyr Gln Ser Leu Lys
115 120 125
Ser Val Val Gln Phe Leu Leu Leu Thr Gly Met Leu Val Gly Gly Ile
130 135 140
Ile Gly Gly His Val Ser Asp Arg Trp Leu Val Glu Ser Ala Arg Trp
145 150 155 160
Leu Ile Ile Thr Asn Lys Leu Asp Glu Gly Leu Lys Ala Leu Arg Lys
165 170 175
Val Ala Arg Thr Asn Gly Ile Lys Asn Ala Glu Arg Asn Pro Glu His
180 185 190
Arg Gly Cys Lys Ile His His Ala Gly Gly Ala Gly Cys Ser Thr Asp
195 200 205
Gln Asn Tyr Cys Val *
210 213

<210> 1714
<211> 178
<212> PRT
<213> Homo sapiens

<400> 1714
Met Ala Ala Ser Trp Ser Leu Leu Val Thr Leu Arg Pro Leu Ala Gln
1 5 10 15
Ser Pro Leu Arg Gly Arg Cys Val Gly Cys Gly Ala Trp Ala Ala Ala
20 25 30
Leu Ala Pro Leu Ala Thr Ala Pro Gly Lys Pro Phe Trp Lys Ala Tyr
35 40 45
Thr Val Gln Thr Ser Glu Ser Met Thr Pro Thr Ala Thr Ser Glu Thr
50 55 60
Tyr Leu Lys Ala Leu Ala Val Cys His Gly Pro Leu Asp His Tyr Asp
65 70 75 80
Phe Leu Ile Lys Ala His Glu Leu Lys Asp Asp Glu His Gln Arg Arg
85 90 95
Val Ile Gln Cys Leu Gln Lys Leu His Glu Asp Leu Lys Gly Tyr Asn
100 105 110
Ile Glu Ala Glu Gly Leu Phe Phe Lys Ala Phe Phe Lys Glu Gln Thr
115 120 125
Ser Lys Gly Pro Val Cys Leu Trp Arg Cys Trp Tyr Arg Lys Asn Asn
130 135 140

Gly Asp Gly His Val Leu Cys Leu Cys Gly Asn Glu Glu Glu Lys Thr
145 150 155 160
Gly Ser Phe Ser Trp Phe His Ala Arg Cys Ala Gln Lys Asn Thr Ser
165 170 175
Pro *
177

<210> 1715
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1715
Met Arg Val Thr Ala Pro Arg Thr Val Leu Leu Leu Leu Trp Gly Ala
1 5 10 15
Val Ala Leu Thr Glu Thr Trp Ala Gly Ser His Ser Met Lys Tyr Phe
20 25 30
Tyr Thr Ala Met Ser Arg Ala Gly Arg Gly Glu Pro Arg Phe Ile Ala
35 40 45
Glu Gly Tyr Val Asp Asp Thr Gln Phe Val Arg Phe Asp Ser Asp Ala
50 55 60
Ala Ser Pro Lys Thr Asp Pro Gly Arg His Gly *
65 70 75

<210> 1716
<211> 83
<212> PRT
<213> Homo sapiens

<400> 1716
Met Arg Phe Thr Phe Pro Leu Met Ala Ile Val Leu Glu Ile Ala Met
1 5 10 15
Ile Ala Ser Phe Gly Leu Phe Val Glu Tyr Glu Thr Asp His Thr Val
20 25 30
Leu Glu His Phe Asn Ile Thr Lys Pro Ser Asp Met Gly Ile Phe Phe
35 40 45
Glu Leu Tyr Pro Leu Phe Gln Asp Val His Gly Met Ile Phe Val Gly
50 55 60
Phe Asp Phe Pro Pro Asp Leu Pro Glu Glu Leu Trp Val Ser Gln Arg
65 70 75 80
Gly Tyr *
82

<210> 1717
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1717
Met Ala Leu Phe Phe Leu Ala Leu Asn Phe Trp Lys Val Gly Met Ala

```
 1               5                   10                  15
Cys Tyr Val Arg Thr Ser Ser Trp Asn Ser Leu Leu Phe Phe Ser Gln
            20                  25                  30
Pro Tyr Phe Leu Gly Ser Cys Phe Glu Gln Tyr Leu Ser Asn Val Cys
        35                  40                  45
Leu Pro Asp Val Val Pro Asp Ala  *
    50                  55  56
```

<210> 1718
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1718

```
Met Tyr Leu Gly Leu Phe Leu Asp Phe Tyr Ser Val Ser Phe Cys Gly
 1               5                  10                  15
Cys Leu His Met Leu Gln Pro Gln Cys Phe Asn Tyr Phe Asn Ser Lys
            20                  25                  30
Asp Gln Ser Arg Phe His Cys Leu Lys His Cys Ser Asp His Leu Ile
        35                  40                  45
Phe Leu Leu Ser Glu Leu Arg Ser Asn Met Phe Ser Ser Phe Leu Ile
    50                  55                  60
Leu Ser Ile Phe Tyr Asp Tyr Cys Ile Asn Leu  *
 65                  70                  75
```

<210> 1719
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1719

```
Met Lys Ile Phe Phe His Ile Phe Phe His Lys Cys Leu Phe Thr Tyr
 1               5                  10                  15
Arg Leu Phe Ile Thr Leu Ala Leu Ile Leu Trp Tyr Ser Asp Ile Glu
            20                  25                  30
Glu Ser Thr Phe Pro Pro Leu Met Arg Tyr Cys Pro Asn Thr Val Leu
        35                  40                  45
His Lys Ser Phe Phe Gln Met Ser Ala Phe Ile Thr Tyr Gln Phe Ser
    50                  55                  60
Leu Tyr Leu Ser Leu Phe  *
 65                  70
```

<210> 1720
<211> 101
<212> PRT
<213> Homo sapiens

<400> 1720

```
Met Leu Ala Gly Gln Leu Leu Pro Met Leu Thr Leu Leu Pro Pro Ser
 1               5                  10                  15
```

Phe Pro Leu Pro His Pro Thr Leu Gly Pro Arg Arg His Ala Ser Leu
20 25 30
Thr Gln Leu Gly Pro Ala Phe Trp Met Ala Trp Gly Arg Pro Trp Ala
35 40 45
His Leu Gly Pro Gly Gln Pro Leu Gly Gln Leu Trp Lys Ser Ser Val
50 55 60
Glu Glu His Leu Leu Ala Ala Trp Leu Gln Pro Leu Ala Leu Leu Glu
65 70 75 80
Trp Ser Leu Gly Ala Ser Ala Leu Ser Ala Leu Gly Thr Ser His Pro
85 90 95
Leu Gly Leu Gln *
100

<210> 1721
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1721
Met Leu Val Leu Leu Val Trp Val His His Thr Leu Leu Leu Gly Gln
1 5 10 15
Lys Ser Thr Tyr Glu Glu Lys Arg Asn Gly Lys Trp Gly Arg Gln Arg
20 25 30
Arg Ala Pro Tyr Leu Gly Val Tyr Ile Glu Ala Thr Gly Gln Val *
35 40 45 47

<210> 1722
<211> 70
<212> PRT
<213> Homo sapiens

<400> 1722
Met Asp Val Gly Pro Asn Ser Leu Pro His Leu Gly Leu Lys Leu Leu
1 5 10 15
Leu Leu Leu Leu Leu Val Thr Leu Arg Gly Gln Ala Asn Thr Gly Trp
20 25 30
Tyr Gly Ile Pro Gly Met Pro Gly Leu Pro Gly Ala Pro Gly Lys Asp
35 40 45
Gly Tyr Asp Gly Leu Pro Gly Pro Lys Gly Glu Pro Gly Ile Asp Ala
50 55 60
Ile Ser Leu Ile Leu *
65 69

<210> 1723
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1723
Met Asp Leu Ile Phe Val Lys Val Leu Leu Ile Phe Ala Ala Ile Gln

```
 1               5                   10                  15
Thr Leu Ser Lys Trp Gln Phe Ala Phe Thr Phe Ser Ile Gln Thr Val
            20                  25                  30
Pro Ser Leu Val Ile Asn Leu Ser Trp Leu Leu Leu Asp Leu Lys Pro
        35                  40                  45
Gly Thr His Ile Gln  *
    50          53
```

<210> 1724
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1724

```
Met Val Ser Gly Trp Ile Thr Lys Thr Gln Phe Leu Leu Leu Gly Arg
 1               5                   10                  15
Gly Lys Ile Cys Met Tyr Lys Cys Ile Lys Gln Leu Gln Val Arg Lys
            20                  25                  30
Thr Asp Val Ile Thr Thr Lys Gln Ile Asn Tyr Glu Glu Ile Asn Cys
        35                  40                  45
Leu Asn His Ile Met Leu Thr Thr Lys Phe Trp  *
    50                  55              59
```

<210> 1725
<211> 63
<212> PRT
<213> Homo sapiens

<400> 1725

```
Met Phe Phe Arg Met Gln Val Cys Glu His His Gly Phe Trp Val Ile
 1               5                   10                  15
Leu Leu Leu Leu Ser Leu Lys Met Glu Ile Pro Leu Ala Ala Tyr Pro
            20                  25                  30
Thr Ala Glu Tyr Ser Ser Ile Gly Ser Gly Phe Thr Pro Leu His Pro
        35                  40                  45
Ser Arg Thr Phe Thr Gln Ala Ser Pro Leu Pro Ser Ile Phe  *
    50                  55                  60      62
```

<210> 1726
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1726

```
Met Cys Leu Phe Cys Ser Phe Val Asn Val Thr Leu Gly Ser Thr Asp
 1               5                   10                  15
Pro Met Cys Cys Pro Ala Gln Trp Leu Ala Gln Arg Met Pro Trp Ala
            20                  25                  30
Phe Val Ser Ile Arg Lys Ala Trp Pro Leu Gly Arg Met Ser Gly Ala
        35                  40                  45
```

```
Ser Gln Arg Leu Lys Glu Glu Glu  *
     50                 55  56
```

<210> 1727
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1727

```
Met Arg Trp Pro Trp Ala Ser Trp Ala Ala Val Leu Leu Lys Leu Pro
 1               5                  10                  15
Arg Arg Val Leu Pro Trp Leu Pro Cys Gly His Gln Gln His Val Arg
            20                  25                  30
Ala Thr Ala Ser Ser Arg Ser Pro Pro Met Pro Val Thr Lys
        35                  40                  45  46
```

<210> 1728
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1728

```
Met Lys Met Glu Met Glu Thr Lys Arg Ser Trp Arg Pro Gln Ser His
 1               5                  10                  15
Gly His Phe Thr Phe Gln Phe Leu Leu Ser Trp Thr Phe Glu Leu Ile
            20                  25                  30
Leu Phe His Phe Val Pro Phe Phe Pro Tyr Leu Leu Phe  *
        35                  40                  45
```

<210> 1729
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1729

```
Met Val Leu Leu Pro Leu Gln Cys Gly Leu Thr Lys Ala Ser Ser Cys
 1               5                  10                  15
Leu His Thr Leu Cys Ser Ser Ser Asp Gln Ile Gly Tyr Leu Pro Val
            20                  25                  30
Lys Asn Thr Asp Gln Leu Gly Leu Gln Met Glu Val Ala Glu Met Cys
        35                  40                  45                  48
 *
```

<210> 1730
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1730
Met Phe Thr Phe Gly Arg Leu Phe Gln Ile Ile Thr Val Val Thr Cys
1 5 10 15
Leu Gln Phe Ile Gln Asp Cys Cys Ile His Ser Arg Gln Ile Asn Ser
20 25 30
Leu Leu Glu Thr Ser Ser Leu Ser Arg Cys Leu Glu Val Pro Asp Val
35 40 45
Cys *
49

<210> 1731
<211> 227
<212> PRT
<213> Homo sapiens

<400> 1731
Met Gly Cys Asp Gly Arg Val Ser Gly Leu Leu Arg Arg Asn Leu Gln
1 5 10 15
Pro Thr Leu Thr Tyr Trp Ser Val Phe Phe Ser Phe Gly Leu Cys Ile
20 25 30
Ala Phe Leu Gly Pro Thr Leu Leu Asp Leu Arg Cys Gln Thr His Ser
35 40 45
Ser Leu Pro Gln Ile Ser Trp Val Phe Phe Ser Gln Gln Leu Cys Leu
50 55 60
Leu Leu Gly Ser Ala Leu Gly Gly Val Phe Lys Arg Thr Leu Ala Gln
65 70 75 80
Ser Leu Trp Ala Leu Phe Thr Ser Ser Leu Ala Ile Ser Leu Val Phe
85 90 95
Ala Val Ile Pro Phe Cys Arg Asp Val Lys Val Leu Ala Ser Val Met
100 105 110
Ala Leu Ala Gly Leu Ala Met Gly Cys Ile Asp Thr Val Ala Asn Met
115 120 125
Gln Leu Val Arg Met Tyr Gln Lys Asp Ser Ala Val Phe Leu Gln Val
130 135 140
Leu His Phe Phe Val Gly Phe Gly Ala Leu Leu Ser Pro Leu Ile Ala
145 150 155 160
Asp Pro Phe Leu Ser Glu Ala Asn Cys Leu Pro Ala Asn Ser Thr Gly
165 170 175
Gln His His Leu Pro Arg Ala Thr Cys Ser Met Ser Pro Gly Cys Trp
180 185 190
Gly Gln His His Val Asp Ala Gln Ala Leu Val Gln Pro Asp Val Pro
195 200 205
Lys Ala Asp Ser Gln Gly Pro Gly Arg Glu Pro Glu Gly Pro Met Pro
210 215 220
Ser Gly *
225 226

<210> 1732
<211> 102
<212> PRT
<213> Homo sapiens

```
<400> 1732
Met Val Ser Lys Phe Leu Leu Ser His Leu Val Leu Ala Val Pro Leu
  1               5                  10                  15
Arg Val Leu Leu Val Leu Trp Ala Leu Cys Val Gly Leu Ser Arg Val
             20                  25                  30
Met Ile Gly Arg His His Val Thr Asp Val Leu Ser Gly Phe Val Ile
         35                  40                  45
Gly Tyr Leu Gln Phe Arg Met Met Glu Lys Val Ser Met Gln Tyr Lys
     50                  55                  60
Thr Cys Arg Met Leu Ile Phe Val Trp Arg Arg Ala Arg Arg Pro Thr
 65                  70                  75                  80
His Thr Phe Glu Gly Arg Leu Val Ser Lys Lys Gly Gln Asp Leu Ala
                 85                  90                  95
Arg Trp Leu Ser Leu  *
            100 101


<210> 1733
<211> 139
<212> PRT
<213> Homo sapiens


<400> 1733
Met Lys Phe Thr Thr Leu Leu Phe Leu Ala Ala Val Ala Gly Ala Leu
  1               5                  10                  15
Val Tyr Ala Glu Asp Ala Ser Ser Asp Ser Thr Gly Ala Asp Pro Ala
             20                  25                  30
Gln Glu Ala Gly Thr Ser Lys Pro Asn Glu Glu Ile Ser Gly Pro Ala
         35                  40                  45
Glu Pro Ala Ser Pro Pro Glu Thr Thr Thr Thr Ala Gln Glu Thr Ser
     50                  55                  60
Ala Ala Ala Val Gln Gly Thr Ala Lys Val Thr Ser Ser Arg Gln Glu
 65                  70                  75                  80
Leu Asn Pro Leu Lys Ser Ile Val Glu Lys Ser Ile Leu Leu Thr Glu
                 85                  90                  95
Gln Ala Leu Ala Lys Ala Gly Lys Gly Met His Gly Gly Val Pro Gly
            100                 105                 110
Gly Lys Gln Phe Ile Glu Asn Gly Ser Glu Phe Ala Gln Lys Leu Leu
        115                 120                 125
Lys Lys Phe Ser Leu Leu Lys Pro Trp Ala  *
    130                 135         138


<210> 1734
<211> 60
<212> PRT
<213> Homo sapiens


<400> 1734
Met Val Arg Ala Ser Phe Leu Cys Cys Val His Arg Thr Leu Gly Pro
  1               5                  10                  15
Trp Asp Leu Ser His Met Glu Leu Gly Gln Leu Leu Gln Asn Ala Pro
             20                  25                  30
Ser Ala His Arg Gly Cys Leu Gly Val Trp Lys Glu Val Val Pro Lys
```

35 40 45
Gln Leu Val Cys Trp Ile Leu Thr Phe Phe Phe *
50 55 59

<210> 1735
<211> 73
<212> PRT
<213> Homo sapiens

<400> 1735
Met Cys Ala Cys Ala Val Arg Ala Leu Ser Leu Ala Gly Gly Ala Val
1 5 10 15
Leu Leu Ser Ser Leu Cys Ala Cys Ala Arg Ala Pro Arg Tyr Val Gly
20 25 30
Gly Glu Arg Arg Val Gln Ser Pro Ala Arg Pro Ala Asp Ser Val Ala
35 40 45
Arg Ile Ala Phe Ile Leu Phe Arg Phe Arg Thr Asp Leu Gln Ser Gly
50 55 60
Pro Ser Leu His Leu Gly Ile Cys *
65 70 72

<210> 1736
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1736
Met Met Ala Leu Phe Thr Gly Lys Leu Leu Gln Val Val Ser Lys Val
1 5 10 15
Leu Trp Leu Tyr Gln Thr Asn Phe Ser Leu His Thr His Tyr Ser Phe
20 25 30
Asn Arg Gly Gln Ile Phe Lys Arg Lys Thr Val Gln Asn Cys Arg His
35 40 45
Thr Cys Ala Asn Pro Gly Ser Val Glu Arg Leu Ile Trp Glu Phe Gln
50 55 60 64
*

<210> 1737
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1737
Met Ile Gln Val Arg Asn Leu Ile Val Leu Val Cys Phe Leu Val Glu
1 5 10 15
Leu Leu Asn Val Pro Val Leu Phe Leu Tyr Ser Arg Gly Trp Gln Thr
20 25 30
Leu Thr His Gly Leu Thr Gln Leu Lys Thr Ala Phe Phe Leu *
35 40 45 46

<210> 1738
<211> 107
<212> PRT
<213> Homo sapiens

<400> 1738
```
Met Val Thr Gln Leu Thr Leu Glu Val Leu His Leu Ser Leu Val Val
 1               5                  10                  15
Gly Gln Val Ser Asn Asn Leu Leu Leu His Ile Gly Pro Leu Ala Ser
            20                  25                  30
Glu Gln Met Phe Tyr Ala Val Ala Thr Lys Ile Arg Asp Glu Asn Thr
        35                  40                  45
Tyr Lys Ile Cys Thr Trp Leu Glu Ile Lys Val His His Val Leu Leu
    50                  55                  60
His Ile Gln Gly Thr Leu Thr Cys Ser Tyr Leu Ser His Ser Glu Gln
65                  70                  75                  80
Leu Val Phe Gln Ser Tyr Glu Tyr Val Asp Cys Arg Gly Asn Ala Ser
                85                  90                  95
Val Pro His Gln Leu Thr Pro His Pro Pro  *
            100                 105 106
```

<210> 1739
<211> 90
<212> PRT
<213> Homo sapiens

<400> 1739
```
Met Val Leu Pro Pro His Lys Thr Val Gln Leu Pro Arg Leu His Leu
 1               5                  10                  15
Val Trp Leu Trp Val Ser Gln Ala Trp Val Gly Gly Thr Val Leu His
            20                  25                  30
Trp Leu Ala Ser Gln Gln Leu Cys Val Leu Val Pro Ala Ser Leu Thr
        35                  40                  45
Met Ser Trp Asp Leu Glu Ala Arg Leu Gly Tyr Ile Leu Ala Trp Met
    50                  55                  60
Ser Leu Gly Pro Cys Tyr Cys Cys Leu Phe Thr Ile Pro Thr Leu Leu
65                  70                  75                  80
Glu Ile Ser Leu Ile Val Ser Leu Ala  *
                85              89
```

<210> 1740
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1740
```
Met His Cys Val Leu Glu Ile Leu Val Ser Val Leu Gly Leu Thr His
 1               5                  10                  15
His Leu Leu Leu Arg Asp Arg Asp His Tyr Arg Leu Val Arg Leu Met
```

```
            20                  25                  30
Gly Asp Val Gly Gly Glu Gly Glu Leu Lys Ala Met Trp Arg Val Cys
        35                  40                  45
Leu Ser Val Cys Arg Val Asp Lys  *
    50                  55  56
```

<210> 1741
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1741
```
Met Ile Leu Asn Lys Ala Leu Met Leu Gly Ala Leu Ala Leu Thr Thr
 1               5                  10                  15
Val Met Ser Pro Cys Gly Gly Glu Gly Ile Val Gly Glu Cys Met Ser
            20                  25                  30
Glu Gly Cys Ser Leu Glu Leu Lys Asn Ser Lys Leu Lys Glu Lys Arg
        35                  40                  45              48
 *
```

<210> 1742
<211> 87
<212> PRT
<213> Homo sapiens

<400> 1742
```
Met Ser Phe Val Lys Ile Leu Ile Trp Glu Leu Phe Ile Ala Cys Phe
 1               5                  10                  15
Pro Gln Gly Pro Leu Val His Ser Gly Lys Met Leu Lys His Gly Leu
            20                  25                  30
Asp Trp His Arg Thr Leu Leu Gln Lys His Pro Cys Ile Leu Phe Phe
        35                  40                  45
Ser Phe Leu Lys Trp Asn Leu Ala Leu Ser Pro Trp Met Glu Gly Ser
    50                  55                  60
Gly Ala Ile Ser Ala His Cys Asn Leu Cys Leu Leu Gly Ser Arg Asp
65                  70                  75                      80
Ala Pro Ala Ser Val Ser  *
                    85  86
```

<210> 1743
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1743
```
Met Gly Phe Leu Ser Leu Thr Leu Tyr Leu Leu Thr Ser Leu Asn Lys
 1               5                  10                  15
Met Leu Phe Lys Leu Arg Gly Ala Gln Pro Thr Glu Glu Asp Ile Gly
            20                  25                  30
```

Gly Trp Leu Asn Glu Leu Lys Thr Ser Leu Lys Tyr Ile Arg Leu Arg
35 40 45 48
*

<210> 1744
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1744
Met Gly Val Ser Glu Leu Leu Leu Leu Leu Lys Met Ile Ala Ser Val
1 5 10 15
Ile Phe Leu Tyr Ser Phe Ile Ser Met Phe Lys Thr Gln Leu Leu Cys
20 25 30
Ser Ser Ser Thr Ser His Gly Ile Leu Glu Ser Arg Ile Lys Cys His
35 40 45
Ala Asp Phe Tyr Leu Phe Cys Gln *
50 55 56

<210> 1745
<211> 96
<212> PRT
<213> Homo sapiens

<400> 1745
Met Asn Gln Leu Ser Phe Leu Leu Phe Leu Ile Ala Thr Thr Arg Gly
1 5 10 15
Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Leu Glu Cys Thr Cys Ser
20 25 30
Trp Ser Pro Ser Leu Pro Lys Ser Cys Pro Glu Ile Lys Asp Gln Cys
35 40 45
Pro Ser Ala Phe Asp Gly Leu Tyr Phe Ile Arg Thr Glu Asn Ala Val
50 55 60
Ile His His Thr Phe Cys Val Met Thr Ser Ala Gly Cys Phe Trp Ile
65 70 75 80
Leu Lys Val Thr Val His Asn Tyr Asp Leu Thr Thr Asp Thr Pro *
85 90 95

<210> 1746
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1746
Met Val Ile Ser Ala Ala Val Leu Ser Ser Ile Leu Cys Val Phe Leu
1 5 10 15
Ser Lys Leu Val Leu Met Asn Asp Glu Cys Leu Arg Leu Thr Phe Trp
20 25 30
Leu His Cys Asn Ala Lys His Tyr Arg Tyr Ser Met Leu Gly Phe Pro

```
         35                  40                   45
Lys Leu Thr Ser Val
     50          53




     <210> 1747
     <211> 49
     <212> PRT
     <213> Homo sapiens


     <400> 1747
Met Asn Phe Glu Ile Leu Ile Gln Arg Ser Leu Leu Phe Tyr Phe Val
  1               5                  10                  15
Leu Ala Leu Asn Phe Pro Val Ala Ser Leu Asp Phe Phe Ser Val Lys
             20                  25                  30
Ile Ile Ser Ala Val Phe Val Glu Gln Lys Phe Trp Asp Phe Val Lys
         35                  40                  45          48
 *




     <210> 1748
     <211> 196
     <212> PRT
     <213> Homo sapiens


     <400> 1748
Met Ala Met Leu Pro Phe Pro Ile Phe Leu Val Leu Leu Leu Arg Gly
  1               5                  10                  15
Leu Val Leu Trp Thr Pro Ala Ser Ser Gly Thr Ile Met Pro Glu Glu
             20                  25                  30
Arg Lys Thr Glu Ile Glu Arg Glu Thr Glu Thr Glu Ser Glu Thr Val
         35                  40                  45
Ile Gly Thr Glu Lys Glu Asn Ala Pro Glu Arg Glu Arg Gly Ser Val
     50                  55                  60
Ile Thr Val Leu His Gln Val Phe Ser Thr Ala Met Lys Asn Asp Thr
 65                  70                  75                  80
Asp Thr Gly Asn Met Gln Lys Glu Val Met Ser Val Thr Glu Gln Val
                 85                  90                  95
Glu Lys Lys Lys Asn Asp Ile Glu Lys Asp Asp Thr Gly Arg Lys Arg
            100                 105                 110
Lys Pro Asp Ile Ser Leu Leu Glu Val Ile Val Asp Val Ala Met Lys
        115                 120                 125
Val Lys Lys Glu Ile Val Thr Gly Asp Thr Asn Thr Lys Asn Leu Lys
    130                 135                 140
Glu Ala Lys Lys Glu Lys Lys Arg Ala Val Ser Leu Pro Leu Asn Arg
145                 150                 155                 160
Arg Ala Pro Lys Leu His Leu Gln Asn Arg His Gly Phe Gly Leu Leu
                165                 170                 175
Cys Ile Leu Val Pro Glu Val Asp Thr Ile Asn Leu Val Ile Phe Leu
            180                 185                 190
Asp Asn Val  *
        195
```

<210> 1749
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1749
Met Leu Val Lys Val Val Tyr Val Met Gly Ala Ile Leu Lys Ile Phe
1 5 10 15
Leu Arg Glu Gly Asn Val Ile Asn Gln Arg Ser Gly Met Asp Ile Glu
20 25 30
Lys Tyr Ser Glu His Tyr Leu Ala Gln Gly Val Arg Trp *
35 40 45

<210> 1750
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1750
Met Glu Leu Val Arg Arg Leu Met Pro Leu Thr Leu Leu Ile Leu Ser
1 5 10 15
Cys Leu Ala Glu Leu Thr Met Ala Glu Ala Glu Gly Asn Ala Ser Cys
20 25 30
Thr Val Ser Leu Gly Gly Ala Asn Met Ala Glu Thr His Lys Ala Met
35 40 45
Ile Leu Gln Leu Asn Pro Ser Glu Asn Cys Thr Trp Thr Ile Glu Arg
50 55 60
Pro Glu Asn Lys Ser Ile Arg Ile Ile Phe Cys Tyr Val Gln Leu Gly
65 70 75 80
Ser Glu
82

<210> 1751
<211> 94
<212> PRT
<213> Homo sapiens

<400> 1751
Met Gly Ser Val Phe Trp His Val Leu Phe Cys Ile Ser Gly Val Cys
1 5 10 15
Leu Trp Cys Ala His Arg Met Ala Ala Phe Leu Gln Gln Met Ala Val
20 25 30
Leu Leu Pro Val Asp Cys Glu Arg Pro Ala Ala Val His Trp Leu Ala
35 40 45
Leu Cys Gly Cys Cys Tyr Gly Gln Leu Val Trp Glu Ser Arg Thr Arg
50 55 60
Ser Cys Phe Trp Ser Leu Glu Cys Leu Cys Phe Gly Gly Gln His Phe
65 70 75 80
Gly Ser Val Pro Ser Phe Phe Cys Ser Ser Val Trp Leu *
85 90 93

<210> 1752
<211> 143
<212> PRT
<213> Homo sapiens

<400> 1752
Met Asp Thr Trp Leu Val Cys Trp Ala Ile Phe Ser Leu Leu Lys Ala
1 5 10 15
Gly Leu Thr Glu Pro Glu Val Thr Gln Thr Pro Ser His Gln Val Thr
20 25 30
Gln Met Gly Gln Glu Val Ile Leu Arg Cys Val Pro Ile Ser Asn His
35 40 45
Leu Tyr Phe Tyr Trp Tyr Arg Gln Ile Leu Gly Gln Lys Val Glu Phe
50 55 60
Leu Val Ser Phe Tyr Asn Asn Glu Ile Ser Glu Lys Ser Glu Ile Phe
65 70 75 80
Asp Asp Gln Phe Ser Val Glu Arg Pro Asp Gly Ser Asn Phe Thr Leu
85 90 95
Lys Ile Arg Ser Thr Lys Leu Glu Asp Ser Ala Met Tyr Phe Cys Ala
100 105 110
Ser Ser Glu Arg Gly Ser Gly Ala Asn Val Leu Thr Phe Gly Ala Gly
115 120 125
Ser Arg Leu Thr Val Leu Glu Asp Leu Lys Asn Val Phe Pro Pro
130 135 140 143

<210> 1753
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1753
Met Val Cys Arg Leu Pro Cys Thr Leu Leu Pro Trp Pro Leu Lys His
1 5 10 15
Lys Gln Gly Ala Leu Leu Tyr Ile Cys Pro Ala Ser Leu Pro Ala Phe
20 25 30
Asn Pro Arg Asn Leu Ser Val Tyr Leu Leu Phe Ser Ala Ser Glu Ser
35 40 45
Leu Pro Leu Lys Ser Glu Gln Ala Arg Pro Gly Gly Ser Arg Leu *
50 55 60 63

<210> 1754
<211> 124
<212> PRT
<213> Homo sapiens

<400> 1754
Met Val Leu Gln Thr His Ala Phe Ile Ser Leu Leu Leu Trp Ile Ser
1 5 10 15
Gly Ala Cys Gly Asp Ile Val Met Thr His Ser Pro Asp Ser Leu Ala
20 25 30

Val Ser Leu Gly Glu Thr Ala Thr Ile Asp Cys Arg Ser Ser Gln Ser
35 40 45
Val Leu Tyr His Ala Asn Asn Lys Asn Tyr Leu Thr Trp Tyr Gln Gln
50 55 60
Arg Pro Arg Gln Ser Pro Lys Val Leu Ile Phe Trp Ala Ser Thr Arg
65 70 75 80
Glu Thr Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp
85 90 95
Tyr Ser Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Thr Tyr
100 105 110
Tyr Cys Gln Gln Tyr Tyr Asp Ser Pro Ile Thr Phe
115 120 124

<210> 1755
<211> 111
<212> PRT
<213> Homo sapiens

<400> 1755
Met Gln Ala Thr Ser Asn Leu Leu Asn Leu Leu Leu Leu Ser Leu Phe
1 5 10 15
Ala Gly Leu Asn Pro Ser Lys Thr His Ile Asn Pro Lys Glu Gly Trp
20 25 30
Gln Val Tyr Ser Ser Ala Gln Asp Pro Asp Gly Arg Gly Ile Cys Thr
35 40 45
Val Val Ala Pro Glu Gln Asn Leu Cys Ser Arg Asp Ala Lys Ser Arg
50 55 60
Gln Leu Arg Gln Leu Leu Glu Lys Val Gln Asn Met Ser Gln Ser Ile
65 70 75 80
Glu Val Leu Asn Leu Arg Thr Gln Arg Asp Phe Gln Tyr Val Leu Lys
85 90 95
Met Glu Thr Gln Met Lys Gly Leu Lys Ala Lys Phe Arg Gln Ile
100 105 110 111

<210> 1756
<211> 74
<212> PRT
<213> Homo sapiens

<400> 1756
Met Leu Pro Arg Leu Val Leu Ser Ser Trp Pro Gln Ser Ile Phe Leu
1 5 10 15
Pro Arg Phe Trp Asn Tyr Arg Cys Glu Pro Pro Cys Leu Ala Cys Phe
20 25 30
Asp Ile Phe Tyr Ser Val Leu Ile Thr Asn Ser Leu His Met Pro Glu
35 40 45
Tyr Lys Ser Lys Cys Tyr Leu Leu Phe Arg Trp Glu Leu Gln Lys Leu
50 55 60
His Gln Lys Tyr Ala Leu Arg Tyr Ile *
65 70 73

<210> 1757
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1757
Met Glu Asn Val Asn Leu Lys Ala Ser Tyr Leu Gln Phe Ser Lys Leu
1 5 10 15
Met Ala Gly Lys Gly Trp Ala Leu Phe Ile Ala Leu Thr Phe Ser Gln
20 25 30
Arg Leu Leu Pro Cys Leu Ala Ile Ile Glu Ile Ile Asn Val Gly Val
35 40 45
Glu *
49

<210> 1758
<211> 123
<212> PRT
<213> Homo sapiens

<400> 1758
Met Ala Trp Ile Pro Leu Phe Leu Gly Val Leu Ala Tyr Cys Thr Glu
1 5 10 15
Ser Val Ala Ser Tyr Glu Leu Phe Gln Pro Pro Ser Val Ser Val Ser
20 25 30
Pro Gly Gln Thr Ala Thr Phe Thr Cys Ser Gly Asp Asp Leu Gly Asn
35 40 45
Lys Tyr Ile Cys Trp Tyr Leu Gln Lys Pro Gly Gln Pro Pro Val Val
50 55 60
Leu Met Tyr Gln Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Phe
65 70 75 80
Ser Gly Ser Asn Ser Gly Ser Thr Ala Thr Leu Thr Ile Ser Gly Thr
85 90 95
Gln Ala Thr Asp Glu Ala Leu Tyr Phe Cys Gln Ala Trp Asp Thr Asn
100 105 110
Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr
115 120 123

<210> 1759
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1759
Met Arg Trp Arg Thr Ile Leu Leu Gln Tyr Cys Phe Leu Leu Ile Thr
1 5 10 15
Cys Leu Leu Thr Ala Leu Glu Ala Val Pro Ile Asp Ile Asp Lys Thr
20 25 30
Lys Val Gln Asn Ile His Pro Val Glu Ser Ala Lys Ile Glu Pro Pro
35 40 45
Asp Thr Gly Leu Tyr Tyr Asp Glu Ile Val Leu Glu Glu Leu Gly Gly
50 55 60

```
Pro Cys Leu Tyr Leu Glu Gly Asn Pro Thr  *
 65                 70              74


     <210> 1760
     <211> 122
     <212> PRT
     <213> Homo sapiens


     <400> 1760
Met Arg Leu Pro Asp Val Gln Leu Trp Leu Val Leu Leu Trp Ala Leu
  1               5                  10                  15
Val Arg Ala Gln Gly Thr Gly Ser Val Cys Pro Ser Cys Gly Gly Ser
             20                  25                  30
Lys Leu Ala Pro Gln Ala Glu Arg Ala Leu Val Leu Glu Leu Ala Lys
         35                  40                  45
Gln Gln Ile Leu Asp Gly Leu His Leu Thr Ser Arg Pro Arg Ile Thr
     50                  55                  60
His Pro Pro Pro Gln Ala Ala Leu Thr Arg Ala Leu Arg Arg Leu Gln
 65                  70                  75                  80
Pro Gly Ser Val Ala Pro Gly Asn Gly Glu Glu Val Ile Ser Phe Ala
                 85                  90                  95
Thr Val Thr Asp Ser Thr Ser Ala Tyr Ser Ser Leu Leu Thr Phe His
            100                 105                 110
Leu Ser Thr Pro Arg Ser His His Leu Tyr
        115                 120     122


     <210> 1761
     <211> 123
     <212> PRT
     <213> Homo sapiens


     <400> 1761
Met Arg Val Arg Ile Gly Leu Thr Leu Leu Leu Cys Ala Val Leu Leu
  1               5                  10                  15
Ser Leu Ala Ser Ala Ser Ser Asp Glu Glu Gly Ser Gln Asp Glu Ser
             20                  25                  30
Leu Asp Ser Lys Thr Thr Leu Thr Ser Asp Glu Ser Val Lys Asp His
         35                  40                  45
Thr Thr Ala Gly Arg Val Val Ala Gly Gln Ile Phe Leu Asp Ser Glu
     50                  55                  60
Glu Ser Glu Leu Glu Ser Ser Ile Gln Glu Glu Glu Asp Ser Leu Lys
 65                  70                  75                  80
Ser Gln Glu Gly Glu Ser Val Thr Glu Asp Ile Ser Phe Leu Glu Ser
                 85                  90                  95
Pro Asn Pro Glu Asn Lys Asp Tyr Glu Glu Pro Lys Lys Val Arg Lys
            100                 105                 110
Pro Gly Ser Leu Asp Ile Phe Leu Ala Phe  *
        115                 120     122


     <210> 1762
     <211> 145
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<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(145)
<223> Xaa = any amino acid or nothing

<400> 1762
Met Ala Leu Ala Ala Leu Met Ile Ala Leu Gly Ser Leu Gly Leu His
1 5 10 15
Thr Trp Gln Ala Gln Ala Val Pro Thr Ile Leu Pro Leu Gly Leu Ala
20 25 30
Pro Asp Thr Phe Asp Asp Thr Tyr Val Gly Cys Ala Glu Glu Met Glu
35 40 45
Glu Lys Ala Ala Pro Leu Leu Lys Glu Glu Met Ala His His Ala Leu
50 55 60
Leu Arg Glu Ser Trp Glu Ala Ala Gln Glu Thr Trp Glu Asp Lys Arg
65 70 75 80
Arg Gly Leu Thr Leu Pro Pro Gly Phe Lys Ala Gln Asn Gly Ile Ala
85 90 95
Ile Met Val Tyr Thr Asn Ser Ser Asn Thr Leu Tyr Trp Glu Leu Asn
100 105 110
Xaa Ala Val Arg Thr Gly Gly Gly Ser Arg Glu Leu Tyr Met Arg His
115 120 125
Phe Pro Phe Lys Ala Leu His Phe Tyr Leu Ile Arg Ala Leu Gln Leu
130 135 140
Leu
145

<210> 1763
<211> 257
<212> PRT
<213> Homo sapiens

<400> 1763
Met Lys Arg Glu Arg Gly Ala Leu Ser Arg Ala Ser Arg Ala Leu Arg
1 5 10 15
Leu Ala Pro Phe Val Tyr Leu Leu Leu Ile Gln Thr Asp Pro Leu Glu
20 25 30
Gly Val Asn Ile Thr Ser Pro Val Arg Leu Ile His Gly Thr Val Gly
35 40 45
Lys Ser Ala Leu Leu Ser Val Gln Tyr Ser Ser Thr Ser Ser Asp Arg
50 55 60
Pro Val Val Lys Trp Gln Leu Lys Arg Asp Lys Pro Val Thr Val Val
65 70 75 80
Gln Ser Ile Gly Thr Glu Val Ile Gly Thr Leu Arg Pro Asp Tyr Arg
85 90 95
Asp Arg Ile Arg Leu Phe Glu Asn Gly Ser Leu Leu Leu Ser Asp Leu
100 105 110
Gln Leu Ala Asp Glu Gly Thr Tyr Glu Val Glu Ile Ser Ile Thr Asp
115 120 125
Asp Thr Phe Thr Gly Glu Lys Thr Ile Asn Leu Thr Val Asp Val Pro
130 135 140
Ile Ser Arg Pro Gln Val Leu Gly Ala Ser Thr Thr Val Leu Glu Leu
145 150 155 160

Ser Glu Ala Phe Thr Leu Asn Cys Ser His Glu Asn Gly Thr Lys Pro
165 170 175
Ser Tyr Thr Trp Leu Lys Asp Gly Lys Pro Leu Leu Asn Asp Ser Arg
180 185 190
Met Leu Leu Ser Pro Asp Gln Lys Val Leu Thr Ile Thr Arg Val Leu
195 200 205
Met Glu Asp Asp Asp Leu Tyr Ser Cys Val Val Glu Asn Pro Ile Asn
210 215 220
Gln Gly Arg Thr Leu Pro Cys Lys Ile Thr Glu Tyr Arg Lys Ser Ser
225 230 235 240
Leu Ser Ser Ile Trp Leu Gln Glu Ala Phe Ser Ser Leu Gly Pro Trp
245 250 255 256
*

<210> 1764
<211> 166
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(166)
<223> Xaa = any amino acid or nothing

<400> 1764
Met Ala Leu Lys Val Leu Leu Glu Gln Glu Lys Thr Phe Phe Thr Leu
1 5 10 15
Leu Val Leu Leu Gly Tyr Leu Ser Cys Lys Val Thr Cys Glu Ser Gly
20 25 30
Asp Cys Arg Gln Gln Glu Phe Arg Asp Arg Ser Gly Asn Cys Val Pro
35 40 45
Cys Asn Gln Cys Gly Pro Gly Met Glu Leu Ser Lys Glu Cys Gly Phe
50 55 60
Gly Tyr Gly Glu Asp Ala Gln Cys Val Thr Cys Arg Leu His Arg Phe
65 70 75 80
Lys Glu Asp Trp Gly Phe Gln Lys Cys Lys Pro Cys Leu Asp Cys Ala
85 90 95
Val Val Asn Arg Phe Gln Lys Ala Asn Cys Ser Ala Thr Ser Asp Ala
100 105 110
Ile Cys Gly Asp Cys Leu Pro Gly Phe Tyr Arg Lys Thr Lys Leu Val
115 120 125
Gly Phe Gln Asp Met Glu Trp Trp Xaa Ala Leu Val Gly Arg Thr Pro
130 135 140
Phe Leu Pro Ser Leu Tyr Gly Asn Pro Ala Leu Gly Cys Gln Pro Arg
145 150 155 160
Val Gln Thr Phe Gly Glu
165 166

<210> 1765
<211> 90
<212> PRT
<213> Homo sapiens

<400> 1765
Met Ser Cys Ser Cys Pro Pro Cys Phe Phe Thr Leu Phe Leu His Ser
1   5   10   15
Ile Cys Gln Asp Ile Ser Trp Phe His Pro Gln Thr Pro Thr Leu Asp
            20   25   30
Ser Leu Leu Asn Trp Ile Asp Asp Leu Ile Phe Tyr Gly Thr Leu Tyr
        35   40   45
Asn Phe Phe Pro Glu Glu Thr Pro Leu Phe Thr Phe Leu Leu Thr Leu
    50   55   60
Tyr Leu Ser Leu Leu Leu Leu Trp Leu Pro Gly Met Ala Ala Leu Pro
65   70   75   80
Leu Ala Val Met Pro Asn Tyr Leu Tyr Lys
                85   90

<210> 1766
<211> 57
<212> PRT
<213> Homo sapiens

<400> 1766
Met Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ser Leu Trp
1   5   10   15
Leu Cys Cys Ala Thr Pro Ala Pro Ala Leu Gln Cys Pro Glu Gly Tyr
            20   25   30
Glu Pro Ser Pro Leu Asp Arg Lys Cys Ala Pro Tyr Pro Asn Val Arg
        35   40   45
Arg Ser Cys Pro Cys Pro Glu Gly Phe
    50   55   57

<210> 1767
<211> 63
<212> PRT
<213> Homo sapiens

<400> 1767
Met Val Phe Leu Tyr Gly Phe Val Phe Ile Lys Lys Ala Gln Leu Ile
1   5   10   15
Val Val Leu Leu Phe Thr Asp Val Ala Gln Arg Thr Ala Ala Gly Arg
            20   25   30
Pro Pro Thr Pro Val Leu Gly Pro Pro Ser Pro Glu Cys Cys Leu Leu
        35   40   45
Phe Met Glu Gly Glu Gln Trp Ile Leu Gly Thr Thr Gly Gln Ala
    50   55   60   63

<210> 1768
<211> 174
<212> PRT
<213> Homo sapiens

<400> 1768

Met Pro Ser Gly Cys Arg Cys Leu His Leu Val Cys Leu Leu Cys Ile
1 5 10 15
Leu Gly Ala Pro Gly Gln Pro Val Arg Ala Asp Asp Cys Ser Ser His
20 25 30
Cys Asp Leu Ala His Gly Cys Cys Ala Pro Asp Gly Ser Cys Arg Cys
35 40 45
Asp Pro Gly Trp Glu Gly Leu His Cys Glu Arg Cys Val Arg Met Pro
50 55 60
Gly Cys Gln His Gly Thr Cys His Gln Pro Trp Gln Cys Ile Cys His
65 70 75 80
Ser Gly Trp Ala Gly Lys Phe Cys Asp Lys Asp Glu His Ile Cys Thr
85 90 95
Thr Gln Ser Pro Cys Gln Asn Gly Gly Gln Cys Met Tyr Asp Gly Gly
100 105 110
Gly Glu Tyr His Cys Val Cys Leu Pro Gly Phe His Gly Arg Asp Cys
115 120 125
Glu Arg Lys Ala Gly Pro Cys Glu Gln Ala Gly Ser Pro Cys Arg Asn
130 135 140
Gly Gly Gln Cys Gln Asp Asp Gln Gly Phe Ala Leu Asn Phe Thr Cys
145 150 155 160
Arg Cys Leu Val Gly Phe Val Gly Ala Arg Cys Asp Val *
165 170 173

<210> 1769
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1769
Met Leu Cys Leu Cys Arg Phe Ala Cys Ser Arg Arg Phe Thr Ala Met
1 5 10 15
Gly Leu Phe Cys Leu Ala Ser Leu Thr Leu His His Ile Phe Lys Val
20 25 30
His Pro Ser Cys Ser Val Ser Val Pro Pro Gly Phe Ser Leu Leu Ser
35 40 45
Ser Ala Arg Cys Met Asp Arg Pro Arg Cys Ala His Leu Phe Ala Leu
50 55 60
Met Gly Pro Cys Leu Gly Leu Ser Thr Phe Gly Arg Leu *
65 70 75 77

<210> 1770
<211> 149
<212> PRT
<213> Homo sapiens

<400> 1770
Met Leu Val Thr Leu Gly Leu Leu Thr Ser Phe Phe Ser Phe Leu Tyr
1 5 10 15
Met Val Ala Pro Ser Ile Arg Lys Phe Phe Ala Gly Gly Val Cys Arg
20 25 30
Thr Asn Val Gln Leu Pro Gly Lys Val Val Val Ile Thr Gly Ala Asn
35 40 45
Thr Gly Ile Gly Lys Glu Thr Ala Arg Glu Leu Ala Ser Arg Gly Ala

50 55 60
Arg Val Tyr Ile Ala Cys Arg Asp Val Leu Lys Gly Glu Ser Ala Ala
65 70 75 80
Ser Glu Ile Arg Val Asp Thr Lys Asn Ser Gln Val Leu Val Arg Lys
85 90 95
Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Glu Gly Phe
100 105 110
Leu Ala Glu Glu Lys Gln Leu His Ile Leu Ile Asn Asn Ala Gly Val
115 120 125
Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Thr His Leu
130 135 140
Gly Val Asn His Leu
145 149

<210> 1771
<211> 76
<212> PRT
<213> Homo sapiens

<400> 1771
Met Met Thr Leu Leu Arg Arg Gln Glu Arg Phe Pro Gly Ile Thr Phe
1 5 10 15
Trp Leu Leu Ile Gln Leu Leu Gln Gln Ile Leu Ile Ser Tyr His Gln
20 25 30
Gly Ser Leu Thr Phe Met Glu Asn Gly Asn Cys Leu Leu Gln Leu Phe
35 40 45
Gln Leu Gly Lys Leu Leu Val Gln Ala Ser His Leu His Gly Gln Leu
50 55 60
Leu Val Phe Val Gln Lys Ile Ile Ile Ser Met *
65 70 75

<210> 1772
<211> 128
<212> PRT
<213> Homo sapiens

<400> 1772
Met Gly Ser Thr Lys His Trp Gly Glu Trp Leu Leu Asn Leu Lys Val
1 5 10 15
Ala Pro Ala Gly Val Phe Gly Val Ala Phe Leu Ala Arg Val Ala Leu
20 25 30
Val Phe Tyr Gly Val Phe Gln Asp Arg Thr Leu His Val Arg Tyr Thr
35 40 45
Asp Ile Asp Tyr Gln Val Phe Thr Asp Ala Ala Arg Phe Val Thr Glu
50 55 60
Gly Arg Ser Pro Tyr Leu Arg Ala Thr Tyr Arg Tyr Thr Pro Leu Leu
65 70 75 80
Gly Trp Leu Leu Thr Pro Asn Ile Tyr Leu Ser Glu Leu Phe Gly Lys
85 90 95
Phe Leu Phe Ile Ser Cys Asp Leu Leu Thr Ala Phe Leu Leu Tyr Arg
100 105 110
Leu Leu Leu Leu Lys Gly Leu Gly Arg Arg Gln Ala Cys Gly Tyr Cys
115 120 125 128

<210> 1773
<211> 614
<212> PRT
<213> Homo sapiens

<400> 1773
Met Gly Ala Leu Arg Pro Thr Leu Leu Pro Pro Ser Leu Pro Leu Leu
1 5 10 15
Leu Leu Leu Met Leu Gly Met Gly Cys Trp Ala Arg Glu Val Leu Val
20 25 30
Pro Glu Gly Pro Leu Tyr Arg Val Ala Gly Thr Ala Val Ser Ile Ser
35 40 45
Cys Asn Val Thr Gly Tyr Glu Gly Pro Ala Gln Gln Asn Phe Glu Trp
50 55 60
Phe Leu Tyr Arg Pro Glu Ala Pro Asp Thr Ala Leu Gly Ile Val Ser
65 70 75 80
Thr Lys Asp Thr Gln Phe Ser Tyr Ala Val Phe Lys Ser Arg Val Val
85 90 95
Ala Gly Glu Val Gln Val Gln Arg Leu Gln Gly Asp Ala Val Val Leu
100 105 110
Lys Ile Ala Arg Leu Gln Ala Gln Asp Ala Gly Ile Tyr Glu Cys His
115 120 125
Thr Pro Ser Thr Asp Thr Arg Tyr Leu Gly Ser Tyr Ser Gly Lys Val
130 135 140
Glu Leu Arg Val Leu Pro Asp Val Leu Gln Val Ser Ala Ala Pro Pro
145 150 155 160
Gly Pro Arg Gly Arg Gln Ala Pro Thr Ser Pro Pro Arg Met Thr Val
165 170 175
His Glu Gly Gln Glu Leu Ala Leu Gly Cys Leu Ala Arg Thr Ser Thr
180 185 190
Gln Lys His Thr His Leu Ala Val Ser Phe Gly Arg Ser Val Pro Glu
195 200 205
Ala Pro Val Gly Arg Ser Thr Leu Gln Glu Val Val Gly Ile Arg Ser
210 215 220
Asp Leu Ala Val Glu Ala Gly Ala Pro Tyr Ala Glu Arg Leu Ala Ala
225 230 235 240
Gly Glu Leu Arg Leu Gly Lys Glu Gly Thr Asp Arg Tyr Arg Met Val
245 250 255
Val Gly Gly Ala Gln Ala Gly Asp Ala Gly Thr Tyr His Cys Thr Ala
260 265 270
Ala Glu Trp Ile Gln Asp Pro Asp Gly Ser Trp Ala Gln Ile Ala Glu
275 280 285
Lys Arg Ala Val Leu Ala His Val Asp Val Gln Thr Leu Ser Ser Gln
290 295 300
Leu Ala Val Thr Val Gly Pro Gly Glu Arg Arg Ile Gly Pro Gly Glu
305 310 315 320
Pro Leu Glu Leu Leu Cys Asn Val Ser Gly Ala Leu Pro Pro Ala Gly
325 330 335
Arg His Ala Ala Tyr Ser Val Gly Trp Glu Met Ala Pro Ala Gly Ala
340 345 350
Pro Gly Pro Gly Arg Leu Val Ala Gln Leu Asp Thr Glu Gly Val Gly
355 360 365
Ser Leu Gly Pro Gly Tyr Glu Gly Arg His Ile Ala Met Glu Lys Val

370 375 380
Ala Ser Arg Thr Tyr Arg Leu Arg Leu Glu Ala Ala Arg Pro Gly Asp
385 390 395 400
Ala Gly Thr Tyr Arg Cys Leu Ala Lys Ala Tyr Val Arg Gly Ser Gly
405 410 415
Thr Arg Leu Arg Glu Ala Ala Ser Ala Arg Ser Arg Pro Leu Pro Val
420 425 430
His Val Arg Glu Glu Gly Val Val Leu Glu Ala Val Ala Trp Leu Ala
435 440 445
Gly Gly Thr Val Tyr Arg Gly Glu Thr Ala Ser Leu Leu Cys Asn Ile
450 455 460
Ser Val Arg Gly Gly Pro Pro Gly Leu Arg Leu Ala Ala Ser Trp Trp
465 470 475 480
Val Glu Arg Pro Glu Asp Gly Glu Leu Ser Ser Val Pro Ala Gln Leu
485 490 495
Val Gly Gly Val Gly Gln Asp Gly Val Ala Glu Leu Gly Val Arg Pro
500 505 510
Gly Gly Gly Pro Val Ser Val Glu Leu Val Gly Pro Arg Ser His Arg
515 520 525
Leu Arg Leu His Ser Leu Gly Pro Glu Asp Glu Gly Val Tyr His Cys
530 535 540
Ala Pro Ser Ala Trp Val Gln His Ala Asp Tyr Ser Trp Tyr Gln Ala
545 550 555 560
Gly Ser Ala Arg Ser Gly Pro Val Thr Val Tyr Pro Tyr Met His Ala
565 570 575
Leu Asp Thr Leu Phe Val Pro Leu Leu Val Gly Thr Gly Val Ala Leu
580 585 590
Val Thr Gly Ala Thr Val Leu Gly Thr Ile Thr Cys Cys Phe Met Lys
595 600 605
Arg Leu Arg Lys Arg *
610 613

<210> 1774
<211> 156
<212> PRT
<213> Homo sapiens

<400> 1774
Met Glu Ala Leu Thr Leu Trp Leu Leu Pro Trp Ile Cys Gln Cys Val
1 5 10 15
Ser Val Arg Ala Asp Ser Ile Ile His Ile Gly Ala Ile Phe Glu Glu
20 25 30
Asn Ala Ala Lys Asp Asp Arg Val Phe Gln Leu Ala Val Ser Asp Leu
35 40 45
Ser Leu Asn Asp Asp Ile Leu Gln Ser Glu Lys Ile Thr Tyr Ser Ile
50 55 60
Lys Val Ile Glu Ala Asn Asn Pro Phe Gln Ala Val Gln Glu Ala Cys
65 70 75 80
Asp Leu Met Thr Gln Gly Ile Leu Ala Leu Val Thr Ser Thr Gly Cys
85 90 95
Ala Ser Ala Asn Ala Leu Gln Ser Leu Thr Asp Ala Met His Ile Pro
100 105 110
His Leu Phe Val Gln Arg Asn Pro Gly Gly Ser Pro Arg Thr Ala Cys
115 120 125
His Leu Asn Pro Ser Pro Asp Gly Glu Ala Tyr Thr Leu Ala Ser Arg
130 135 140

Pro Pro Val Arg Leu Asn Asp Val Met Leu Arg Leu
145 150 155 156

<210> 1775
<211> 896
<212> PRT
<213> Homo sapiens

<400> 1775
Met Gln Lys Ala Ser Val Leu Leu Phe Leu Ala Trp Val Cys Phe Leu
1 5 10 15
Phe Tyr Ala Gly Ile Ala Leu Phe Thr Ser Gly Phe Leu Leu Thr Arg
20 25 30
Leu Glu Leu Thr Asn His Ser Ser Cys Gln Glu Pro Pro Gly Pro Gly
35 40 45
Ser Leu Pro Trp Gly Ser Gln Gly Lys Pro Gly Ala Cys Trp Met Ala
50 55 60
Ser Arg Phe Ser Arg Val Val Leu Val Leu Ile Asp Ala Leu Arg Phe
65 70 75 80
Asp Phe Ala Gln Pro Gln His Ser His Val Pro Arg Glu Pro Pro Val
85 90 95
Ser Leu Pro Phe Leu Gly Lys Leu Ser Ser Leu Gln Arg Ile Leu Glu
100 105 110
Ile Gln Pro His His Ala Arg Leu Tyr Arg Ser Gln Val Asp Pro Pro
115 120 125
Thr Thr Thr Met Gln Arg Leu Lys Ala Leu Thr Thr Gly Ser Leu Pro
130 135 140
Thr Phe Ile Asp Ala Gly Ser Asn Phe Ala Ser His Ala Ile Val Glu
145 150 155 160
Asp Asn Leu Ile Lys Gln Leu Thr Ser Ala Gly Arg Arg Val Val Phe
165 170 175
Met Gly Asp Asp Thr Trp Lys Asp Leu Phe Pro Gly Ala Phe Ser Lys
180 185 190
Ala Phe Phe Phe Pro Ser Phe Asn Val Arg Asp Leu Asp Thr Val Asp
195 200 205
Asn Gly Ile Leu Glu His Leu Tyr Pro Thr Met Asp Ser Gly Glu Trp
210 215 220
Asp Val Leu Ile Ala His Phe Leu Gly Val Asp His Cys Gly His Lys
225 230 235 240
His Gly Pro His His Pro Glu Met Ala Lys Lys Leu Ser Gln Met Asp
245 250 255
Gln Val Ile Gln Gly Leu Val Glu Arg Leu Glu Asn Asp Thr Leu Leu
260 265 270
Val Val Ala Gly Asp His Gly Met Thr Thr Asn Gly Asp His Gly Gly
275 280 285
Asp Ser Glu Leu Glu Val Ser Ala Ala Leu Phe Leu Tyr Ser Pro Thr
290 295 300
Ala Val Phe Pro Ser Thr Pro Pro Glu Glu Pro Glu Val Ile Pro Gln
305 310 315 320
Val Ser Leu Val Pro Thr Leu Ala Leu Leu Leu Gly Leu Pro Ile Pro
325 330 335
Phe Gly Asn Ile Gly Glu Val Met Ala Glu Leu Phe Ser Gly Gly Glu
340 345 350
Asp Ser Gln Pro His Ser Ser Ala Leu Ala Gln Ala Ser Ala Leu His
355 360 365
Leu Asn Ala Gln Gln Val Ser Arg Phe Phe His Thr Tyr Ser Ala Ala

370 375 380
Thr Gln Asp Leu Gln Ala Lys Glu Leu His Gln Leu Gln Asn Leu Phe
385 390 395 400
Ser Lys Ala Ser Ala Asp Tyr Gln Trp Leu Leu Gln Ser Pro Lys Gly
405 410 415
Ala Glu Ala Thr Leu Pro Thr Val Ile Ala Glu Leu Gln Gln Phe Leu
420 425 430
Arg Gly Ala Arg Ala Met Cys Ile Glu Ser Trp Ala Arg Phe Ser Leu
435 440 445
Val Arg Met Ala Gly Gly Thr Ala Leu Leu Ala Ala Ser Cys Phe Ile
450 455 460
Cys Leu Leu Ala Ser Gln Trp Ala Ile Ser Pro Gly Phe Pro Phe Cys
465 470 475 480
Pro Leu Leu Leu Thr Pro Val Ala Trp Gly Leu Val Gly Ala Ile Ala
485 490 495
Tyr Ala Gly Leu Leu Gly Thr Ile Glu Leu Lys Leu Asp Leu Val Leu
500 505 510
Leu Gly Ala Val Ala Ala Val Ser Ser Phe Leu Pro Phe Leu Trp Lys
515 520 525
Ala Trp Ala Gly Trp Gly Ser Lys Arg Pro Leu Ala Thr Leu Phe Pro
530 535 540
Ile Pro Gly Pro Val Leu Leu Leu Leu Leu Phe Arg Leu Ala Val Phe
545 550 555 560
Phe Ser Asp Ser Phe Val Val Ala Glu Ala Arg Ala Thr Pro Phe Leu
565 570 575
Leu Gly Ser Phe Ile Leu Leu Leu Val Val Gln Leu His Trp Glu Gly
580 585 590
Gln Leu Leu Pro Pro Lys Leu Leu Thr Met Pro Arg Leu Gly Thr Ser
595 600 605
Ala Thr Thr Asn Pro Pro Arg His Asn Gly Ala Tyr Ala Leu Arg Leu
610 615 620
Gly Ile Gly Leu Leu Leu Cys Thr Arg Leu Ala Gly Leu Phe His Arg
625 630 635 640
Cys Pro Glu Glu Thr Pro Val Cys His Ser Ser Pro Trp Leu Ser Pro
645 650 655
Leu Ala Ser Met Val Gly Gly Arg Ala Lys Asn Leu Trp Tyr Gly Ala
660 665 670
Cys Val Ala Ala Leu Val Ala Leu Leu Ala Ala Val Arg Leu Trp Leu
675 680 685
Arg Arg Tyr Gly Asn Leu Lys Ser Pro Glu Pro Pro Met Leu Phe Val
690 695 700
Arg Trp Gly Leu Pro Leu Met Ala Leu Gly Thr Ala Ala Tyr Trp Ala
705 710 715 720
Leu Ala Ser Gly Ala Asp Glu Ala Pro Pro Arg Leu Arg Val Leu Val
725 730 735
Ser Gly Ala Ser Met Val Leu Pro Arg Ala Val Ala Gly Leu Ala Ala
740 745 750
Ser Gly Leu Ala Leu Leu Leu Trp Lys Pro Val Thr Val Leu Val Lys
755 760 765
Ala Gly Ala Gly Ala Pro Arg Thr Arg Thr Val Leu Thr Pro Phe Ser
770 775 780
Gly Pro Pro Thr Ser Gln Ala Asp Leu Asp Tyr Val Val Pro Gln Ile
785 790 795 800
Tyr Arg His Met Gln Glu Glu Phe Arg Gly Arg Leu Glu Arg Thr Lys
805 810 815
Ser Gln Gly Pro Leu Thr Val Ala Ala Tyr Gln Leu Gly Ser Val Tyr
820 825 830
Ser Ala Ala Met Val Thr Ala Leu Thr Leu Leu Ala Phe Pro Leu Leu
835 840 845

Leu Leu His Ala Glu Arg Ile Ser Leu Val Phe Leu Leu Leu Phe Leu
850 855 860
Gln Ser Phe Leu Leu Leu His Leu Leu Ala Ala Gly Ile Pro Val Thr
865 870 875 880
Thr Pro Gly Lys Tyr Leu Ser Ser Asp Ser Leu Lys Asp Asn Ser Asp
885 890 895 896

<210> 1776
<211> 178
<212> PRT
<213> Homo sapiens

<400> 1776
Met Trp Ala Cys Trp Cys Val Leu Gly Thr Pro Gly Val Ala Met Val
1 5 10 15
Leu Leu His Thr Thr Ile Ser Phe Cys Val Ala Gln Phe Arg Ser Gln
20 25 30
Leu Leu Thr Trp Leu Cys Ser Leu Leu Leu Leu Ser Thr Leu Arg Leu
35 40 45
Gln Gly Val Glu Glu Val Lys Arg Arg Trp Tyr Lys Thr Glu Asn Glu
50 55 60
Tyr Tyr Leu Leu Gln Phe Thr Leu Thr Val Arg Cys Leu Tyr Tyr Thr
65 70 75 80
Ser Phe Ser Leu Glu Leu Cys Trp Gln Gln Leu Pro Ala Ala Ser Thr
85 90 95
Ser Tyr Ser Phe Pro Trp Met Leu Ala Tyr Val Phe Tyr Tyr Pro Val
100 105 110
Leu His Asn Gly Pro Ile Leu Ser Phe Ser Glu Phe Ile Lys Gln Arg
115 120 125
Ser Gln Trp Ser Asn Arg Glu Phe Gly Met Glu Val Glu Ser Lys Gly
130 135 140
Pro Gly Ala His Pro Pro Gly Phe Glu Ser Leu Leu Cys Phe Gly Leu
145 150 155 160
Arg Val Leu Ala Glu Leu Leu Thr Leu Leu Met Pro Gln Ser Ser Tyr
165 170 175
Gln *
177

<210> 1777
<211> 59
<212> PRT
<213> Homo sapiens

<400> 1777
Met Pro Thr Tyr Trp Leu Ala Asn Leu Arg Pro Gly Leu Gln Pro Phe
1 5 10 15
Leu Leu His Phe Leu Leu Glu Trp Leu Ala Val Phe Cys Cys Lys Ile
20 25 30
Met Val Leu Ala Ala Ala Gly Leu Leu Pro Thr Leu His Met Ala Ser
35 40 45
Phe Phe Ser Asn Ala Leu Tyr Asn Cys Phe Tyr

50 55 59

<210> 1778
<211> 137
<212> PRT
<213> Homo sapiens

<400> 1778
Met Val Ala Pro Gly Leu Val Leu Gly Leu Val Leu Pro Leu Ile Leu
1 5 10 15
Trp Ala Asp Arg Ser Ala Gly Ile Gly Phe Arg Phe Ala Ser Tyr Ile
20 25 30
Asn Asn Asp Met Val Leu Gln Lys Glu Pro Ala Gly Ala Val Ile Trp
35 40 45
Gly Phe Gly Thr Pro Gly Ala Thr Val Thr Val Thr Leu Arg Gln Gly
50 55 60
Gln Glu Thr Ile Met Lys Lys Val Thr Ser Val Lys Ala His Ser Asp
65 70 75 80
Thr Trp Met Val Val Leu Asp Pro Met Lys Pro Gly Gly Pro Phe Glu
85 90 95
Val Met Ala Gln Gln Thr Leu Glu Lys Ile Asn Phe Thr Leu Arg Val
100 105 110
His Asp Val Leu Phe Gly Asp Val Trp Leu Cys Ser Gly Gln Ser Asn
115 120 125
Met Gln Met Thr Val Leu Gln Ile Phe
130 135 137

<210> 1779
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1779
Met Lys Val Phe Phe Leu Asp Glu Ser Trp Pro Gln Trp Arg Phe Ala
1 5 10 15
Ala Gly Leu Leu Ala Leu Ser Phe Gly Gly Pro Ala Trp Lys Phe Leu
20 25 30
Ser Val Gln Arg Val Ile Pro Trp Leu Trp Ala Ala Lys Glu Lys Pro
35 40 45
Leu Gly Pro Leu Ala Thr Pro Pro Arg Leu Asn Pro Lys Val Gly Val
50 55 60 64
*

<210> 1780
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1780

```
Met Phe His Cys Tyr Trp Phe Arg Cys Leu Ser Pro Gln Thr Leu Leu
  1               5                  10                  15
Cys Lys Cys Phe Ser Lys Gly Arg Thr Asp Trp Asn Cys Gly Ser Ala
            20                  25                  30
Arg Ser His Ser Phe Gln Ser His Phe Phe Ser Ala Ala Leu Ser Ser
        35                  40                  45
Cys Gly Thr Leu  *
    50      52
```

```
<210> 1781
<211> 109
<212> PRT
<213> Homo sapiens
```

```
<400> 1781
Met Met His Asn Ile Ile Val Lys Glu Leu Ile Val Thr Phe Phe Leu
  1               5                  10                  15
Gly Ile Thr Val Val Gln Met Leu Ile Ser Val Thr Gly Leu Lys Gly
            20                  25                  30
Val Glu Ala Gln Asn Gly Ser Glu Ser Glu Val Phe Val Gly Lys Tyr
        35                  40                  45
Glu Thr Leu Val Phe Tyr Trp Pro Ser Leu Leu Cys Leu Ala Phe Leu
    50                  55                  60
Leu Gly Arg Phe Leu His Met Phe Val Lys Ala Leu Arg Val His Leu
 65                  70                  75                  80
Gly Trp Glu Leu Gln Val Glu Glu Lys Ser Val Leu Glu Val His Gln
                 85                  90                  95
Gly Glu His Val Lys Gln Leu Leu Arg Ile Pro Arg Pro
            100                 105             109
```

```
<210> 1782
<211> 58
<212> PRT
<213> Homo sapiens
```

```
<400> 1782
Met Ala Ser Thr Trp Ser Leu Glu Arg Val Gly Thr Cys Leu Pro Cys
  1               5                  10                  15
Gly Phe Gly Thr Trp Gln Ser Thr Ala Arg Trp Pro Ser Cys Arg Ser
            20                  25                  30
Thr Ser Met Val Trp Leu Val Trp Pro Ser Leu Leu Ala Pro Ser Thr
        35                  40                  45
Leu Ser Leu Trp Ala Thr Ser Met Thr  *
    50                  55      57
```

```
<210> 1783
<211> 102
<212> PRT
<213> Homo sapiens
```

<400> 1783
Met Leu Ile Pro His Gln Leu Pro Leu Cys Ser Pro Trp Leu Val Gln
1 5 10 15
Ala Met Leu Thr Ile Glu Val Pro Trp Leu Leu Gly Leu Ala His Tyr
20 25 30
Arg Leu Gly Trp His Ala Leu Glu Gly Ile Phe Trp Trp Gly Ala Ser
35 40 45
Val Phe His Ala Leu Gln Ala Met Leu Val Arg Lys Trp Pro Leu Gly
50 55 60
Leu Val Glu Phe Thr Gly Thr Cys Gly Ile Leu Val Glu Val Ile Gly
65 70 75 80
Leu Trp Trp Gly Glu Gly Ser Thr Gly Asn Arg Trp Met Gly Leu Asn
85 90 95
Ser Thr Gly Gly Gln *
100 101

<210> 1784
<211> 243
<212> PRT
<213> Homo sapiens

<400> 1784
Met Gly Glu Ala Ser Pro Pro Ala Pro Ala Arg Arg His Leu Leu Val
1 5 10 15
Leu Leu Leu Leu Leu Ser Thr Leu Val Ile Pro Ser Ala Ala Ala Pro
20 25 30
Ile His Asp Ala Asp Ala Gln Glu Ser Ser Leu Gly Leu Thr Gly Leu
35 40 45
Gln Ser Leu Leu Gln Gly Phe Ser Arg Leu Phe Leu Lys Gly Asn Leu
50 55 60
Leu Arg Gly Ile Asp Ser Leu Phe Ser Ala Pro Met Asp Phe Arg Gly
65 70 75 80
Leu Pro Gly Asn Tyr His Lys Glu Glu Asn Gln Glu His Gln Leu Gly
85 90 95
Asn Asn Thr Leu Ser Ser His Leu Gln Ile Asp Lys Met Thr Asp Asn
100 105 110
Lys Thr Gly Glu Val Leu Ile Ser Glu Asn Val Val Ala Ser Ile Gln
115 120 125
Pro Ala Glu Gly Ser Phe Glu Gly Asp Leu Lys Val Pro Arg Met Glu
130 135 140
Glu Lys Glu Ala Leu Val Pro Ile Gln Lys Ala Thr Asp Ser Phe His
145 150 155 160
Thr Glu Leu His Pro Arg Val Ala Phe Trp Ile Ile Lys Leu Pro Arg
165 170 175
Arg Arg Ser His Gln Asp Ala Leu Glu Gly Gly His Trp Leu Ser Glu
180 185 190
Lys Arg His Arg Leu Gln Ala Ile Arg Asp Gly Leu Arg Lys Gly Thr
195 200 205
His Lys Asp Val Leu Glu Glu Gly Thr Glu Ser Ser Ser His Ser Arg
210 215 220
Leu Ser Pro Arg Lys Thr His Leu Leu Tyr Ile Leu Arg Pro Ser Arg
225 230 235 240
Gln Leu *
242

<210> 1785
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1785

```
Met Lys Ala Leu Leu Leu Leu Val Leu Pro Trp Leu Ser Pro Ala Asn
 1               5                   10                  15
Tyr Ile Asp Asn Val Gly Asn Leu His Phe Leu Tyr Ser Glu Leu Cys
            20                  25                  30
Lys Gly Ala Ser His Tyr Gly Leu Thr Lys Asp Arg Lys Arg Arg Ser
        35                  40                  45
Gln Asp Gly Cys Pro Asp Gly Cys Ala Ser Leu Thr Ala Thr Ala Pro
    50                  55                  60
Ser Pro Glu Val Ser Ala Ala Ala Thr Ile Ser Leu Met Thr Asp Glu
65                  70                  75                  80
Pro Gly Leu Asp Asn Pro Ala Tyr Val Ser Ser Ala Glu Asp Gly Gln
                85                  90                  95
Pro Ala Ile Ser Pro Val Asp Ser Gly Arg Ser Asn Arg Thr Arg Ala
            100                 105                 110
Arg Pro Phe Glu Arg Ser Thr Ile Ile Ser Arg Ser Phe Lys Lys Ile
        115                 120                 125
Asn Arg Ala Leu Ser Val Leu Arg Arg Thr Lys Ser Gly Ser Ala Val
    130                 135                 140
Ala Asn His Ala Asp Gln Gly Arg Glu Asn Ser Glu Asn Thr
145                 150                 155         158
```

<210> 1786
<211> 142
<212> PRT
<213> Homo sapiens

<400> 1786

```
Met Glu Ser Ala Val Arg Val Glu Ser Gly Val Leu Val Gly Val Val
 1               5                   10                  15
Cys Leu Leu Leu Ala Cys Pro Ala Thr Ala Thr Gly Pro Glu Val Ala
            20                  25                  30
Gln Pro Glu Val Asp Thr Thr Leu Gly Arg Val Arg Gly Arg Gln Val
        35                  40                  45
Gly Val Lys Gly Thr Asp Arg Leu Val Asn Val Phe Leu Gly Ile Pro
    50                  55                  60
Phe Ala Gln Pro Pro Leu Gly Pro Asp Arg Phe Ser Ala Pro His Pro
65                  70                  75                  80
Ala Gln Pro Trp Glu Gly Val Arg Asp Ala Ser Thr Ala Pro Pro Met
                85                  90                  95
Cys Leu Gln Asp Val Glu Ser Met Asn Ser Ser Arg Phe Val Leu Asn
            100                 105                 110
Gly Lys Gln Gln Ile Phe Ser Val Ser Glu Asp Cys Leu Val Leu Asn
        115                 120                 125
Val Tyr Ser Pro Ala Glu Val Pro Ala Gly Ser Gly Arg Pro
    130                 135                 140         142
```

<210> 1787
<211> 120
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(120)
<223> Xaa = any amino acid or nothing

<400> 1787

```
Met Ala Leu Thr Gly Tyr Ser Trp Leu Leu Leu Ser Ala Thr Phe Leu
 1               5                  10                  15
Asn Val Gly Ala Glu Ile Ser Ile Thr Leu Glu Pro Ala Gln Pro Ser
            20                  25                  30
Glu Gly Asp Asn Val Thr Leu Val Val His Gly Leu Ser Gly Glu Leu
        35                  40                  45
Leu Ala Tyr Ser Trp Tyr Ala Gly Pro Thr Leu Ser Val Ser Tyr Leu
    50                  55                  60
Val Ala Ser Tyr Ile Val Ser Thr Gly Asp Glu Thr Pro Gly Pro Ala
65                  70                  75                  80
His Thr Xaa Arg Glu Ala Val Arg Pro Asp Gly Ser Leu Asp Ile Gln
                85                  90                  95
Gly Ile Leu Pro Arg His Ser Ser Thr Tyr Ile Leu Gln Thr Phe Asn
            100                 105                 110
Arg Gln Leu Gln Thr Glu Val Gly
        115                 120
```

<210> 1788
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1788

```
Met Ser Trp Leu Ala Asn Gly Val Cys Leu Tyr Glu Tyr Leu Phe Phe
 1               5                  10                  15
Arg Cys Gly Phe Leu Ile Leu Gln Pro Cys Ser Phe Asp Ala Ser Leu
            20                  25                  30
Thr Asp Glu Glu Ser Arg Lys Asn Trp Glu Glu Phe Gly Asn Pro Asp
        35                  40                  45
Gly Pro Gln Gly Val Val Asn Asp Asp Phe Lys Ile Leu Ala Ile Trp
    50                  55                  60
Tyr Ile Leu  *
 65     67
```

<210> 1789
<211> 133
<212> PRT
<213> Homo sapiens

<400> 1789

```
Met Ala Val Val Ile Arg Leu Leu Gly Leu Pro Phe Ile Ala Gly Pro
 1               5                  10                  15
```

Val Asp Ile Arg His Phe Phe Thr Gly Leu Thr Ile Pro Asp Gly Gly
20 25 30
Val His Ile Ile Gly Gly Glu Ile Gly Glu Ala Phe Ile Ile Phe Ala
35 40 45
Thr Asp Glu Asp Ala Arg Arg Ala Ile Ser Arg Ser Gly Gly Phe Ile
50 55 60
Lys Asp Ser Ser Val Glu Leu Phe Leu Ser Ser Lys Ala Glu Met Gln
65 70 75 80
Lys Thr Ile Glu Met Lys Arg Thr Asp Arg Val Gly Arg Gly Arg Pro
85 90 95
Gly Ser Gly Thr Ser Gly Val Asp Ser Leu Ser Asn Phe Ile Glu Ser
100 105 110
Val Lys Glu Glu Ala Ser Asn Ser Gly Tyr Gly Ser Ser Ile Asn Gln
115 120 125
Asp Ala Gly Phe His
130 133

<210> 1790
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1790
Met Ala Ala Trp Gly Phe Cys Phe Ala Val Ser Ala Leu Val Val Ala
1 5 10 15
Cys Glu Phe Thr Arg Leu His Gly Cys Leu Arg Leu Ser Trp Gly Asn
20 25 30
Phe Thr Ala Ala Phe Ala Met Leu Ala Thr Leu Leu Cys Ala Thr Ala
35 40 45
Ala Val Leu Tyr Pro Leu Tyr Phe Ala Arg Arg Glu Cys Pro Pro Glu
50 55 60
Pro Ala Gly Cys Ala Ala Arg Asp Phe Arg Leu Ala Ala Ser Val Phe
65 70 75 80
Ala Gly
82

<210> 1791
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1791
Met His Ala Ser Glu Gly Leu Pro Ala Leu Pro Leu Leu Ala Leu Val
1 5 10 15
Ser His Ser His Ser Cys Pro Pro Leu Pro Leu Gln Pro His His Leu
20 25 30
Pro Ala Ile Leu Phe Phe Leu Val Gly His Gln Leu Met Lys Cys Ile
35 40 45
Arg *
49

<210> 1792
<211> 166
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(166)
<223> Xaa = any amino acid or nothing

<400> 1792
Met Leu Leu Trp Leu Leu Leu Leu Ile Leu Thr Pro Gly Arg Glu Gln
1 5 10 15
Ser Gly Val Ala Pro Lys Ala Val Leu Leu Leu Asp Pro Pro Trp Ser
20 25 30
Thr Ala Phe Lys Gly Glu Lys Val Ala Leu Ile Cys Ser Ser Ile Ser
35 40 45
His Ser Leu Ala Gln Gly Asp Thr Tyr Trp Tyr His Asp Glu Lys Leu
50 55 60
Leu Lys Ile Lys His Asp Lys Ile Gln Ile Thr Glu Pro Gly Asn Tyr
65 70 75 80
Gln Cys Lys Thr Arg Gly Ser Ser Leu Ser Asp Ala Val His Val Glu
85 90 95
Phe Ser Pro Asp Trp Leu Ile Leu Gln Ala Leu His Pro Val Phe Glu
100 105 110
Gly Asp Asn Val Ile Leu Arg Cys Gln Gly Lys Asp Asn Lys Asn Thr
115 120 125
His His Lys Val Tyr Tyr Lys Asp Gly Lys Gln Xaa Ser Asn Ser Tyr
130 135 140
Asn Leu Glu Lys Asn Thr Val Asp Ser Val Ser Arg Asp Asn Ser Pro
145 150 155 160
Tyr Tyr Cys Ala Gly *
165

<210> 1793
<211> 146
<212> PRT
<213> Homo sapiens

<400> 1793
Met Ala Thr Ala Ala Gln Gly Pro Leu Ser Leu Leu Trp Gly Trp Leu
1 5 10 15
Trp Ser Glu Arg Phe Trp Leu Pro Glu Asn Val Ser Trp Ala Asp Leu
20 25 30
Glu Gly Pro Ala Asp Gly Tyr Gly Tyr Pro Arg Gly Arg His Ile Leu
35 40 45
Ser Val Phe Pro Leu Ala Ala Gly Ile Phe Phe Val Arg Leu Leu Phe
50 55 60
Glu Arg Phe Ile Ala Lys Pro Cys Ala Leu Arg Ile Gly Ile Glu Asp
65 70 75 80
Ser Gly Pro Tyr Gln Ala Gln Pro Asn Ala Ile Leu Glu Lys Val Phe
85 90 95
Ile Ser Ile Thr Lys Tyr Pro Asp Lys Lys Arg Leu Glu Gly Leu Ser
100 105 110
Lys Gln Leu Asp Trp Asn Val Arg Lys Ile Gln Cys Trp Phe Arg His
115 120 125

Arg Arg Asn Gln Asp Lys Pro Pro Thr Leu Thr Lys Phe Cys Glu Ser
130 135 140
Met *
145

<210> 1794
<211> 151
<212> PRT
<213> Homo sapiens

<400> 1794
Met Glu Arg Arg Arg Leu Leu Gly Gly Met Ala Leu Leu Leu Leu Gln
1 5 10 15
Ala Leu Pro Ser Pro Leu Ser Ala Arg Ala Glu Pro Pro Gln Asp Lys
20 25 30
Glu Ala Cys Val Gly Thr Asn Asn Gln Ser Tyr Ile Cys Asp Thr Gly
35 40 45
His Cys Cys Gly Gln Ser Gln Cys Cys Asn Tyr Tyr Tyr Glu Leu Trp
50 55 60
Trp Phe Trp Leu Val Trp Thr Ile Ile Ile Ile Leu Ser Cys Cys Cys
65 70 75 80
Val Cys His His Arg Arg Ala Lys His Arg Leu Gln Ala Gln Gln Arg
85 90 95
Gln His Glu Ile Asn Leu Ile Ala Tyr Arg Glu Ala His Asn Tyr Ser
100 105 110
Ala Leu Pro Phe Tyr Phe Arg Phe Leu Pro Asn Tyr Leu Leu Pro Pro
115 120 125
Tyr Glu Glu Val Val Asn Arg Pro Pro Thr Pro Pro Pro Pro Tyr Ser
130 135 140
Ala Phe Gln Leu Gln Gln Gln
145 150 151

<210> 1795
<211> 177
<212> PRT
<213> Homo sapiens

<400> 1795
Met Ala Ala Leu Ala Ala Ala Ala Lys Lys Val Trp Ser Ala Arg Arg
1 5 10 15
Leu Leu Val Leu Leu Phe Thr Pro Leu Ala Leu Leu Pro Val Val Phe
20 25 30
Ala Leu Pro Pro Lys Glu Gly Arg Cys Leu Phe Val Ile Leu Leu Met
35 40 45
Ala Val Tyr Trp Cys Thr Glu Ala Leu Pro Leu Ser Val Thr Ala Leu
50 55 60
Leu Pro Ile Val Leu Phe Pro Phe Met Gly Ile Leu Pro Ser Asn Lys
65 70 75 80
Val Cys Pro Gln Tyr Phe Leu Asp Thr Asn Phe Leu Phe Leu Ser Gly
85 90 95
Leu Ile Met Ala Ser Ala Ile Glu Glu Trp Asn Leu His Arg Arg Ile
100 105 110
Ala Leu Lys Ile Leu Met Leu Val Gly Val Gln Pro Ala Arg Leu Ile

```
        115                 120                 125
Leu Gly Met Met Val Thr Thr Ser Phe Leu Ser Met Trp Leu Ser Asn
    130                 135                 140
Thr Ala Ser Thr Ala Met Met Leu Pro Ile Ala Asn Ala Ile Leu Lys
145                 150                 155                 160
Ser Leu Phe Gly Gln Lys Glu Val Arg Lys Asp Pro Gln Pro Gly Glu
                165                 170                 175 176
 *
```

<210> 1796
<211> 98
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(98)
<223> Xaa = any amino acid or nothing

<400> 1796

```
Met His Pro Leu Pro Gly Tyr Trp Ser Cys Tyr Cys Leu Leu Leu Leu
 1               5                  10                  15
Phe Ser Leu Gly Val Gln Gly Ser Leu Gly Ala Pro Ser Ala Ala Pro
            20                  25                  30
Glu Gln Val His Leu Ser Tyr Pro Gly Glu Pro Gly Ser Met Thr Val
        35                  40                  45
Thr Trp Thr Thr Trp Val Pro Thr Arg Ser Glu Val Gln Phe Gly Leu
    50                  55                  60
Gln Pro Ser Gly Pro Leu Pro Leu Arg Ala Gln Gly Thr Phe Val Pro
 65                 70                  75                  80
Phe Val Asp Xaa Gly Ile Leu Arg Arg Lys Leu Tyr Ile His Arg Val
                85                  90                  95
Thr Leu
    98
```

<210> 1797
<211> 96
<212> PRT
<213> Homo sapiens

<400> 1797

```
Met Phe Leu Trp Leu Phe Leu Ile Leu Ser Ala Leu Ile Ser Ser Thr
 1               5                  10                  15
Asn Ala Asp Ser Asp Ile Ser Val Glu Ile Cys Asn Val Cys Ser Cys
            20                  25                  30
Val Ser Val Glu Asn Val Leu Tyr Val Asn Cys Glu Lys Val Ser Val
        35                  40                  45
Tyr Arg Pro Asn Gln Leu Lys Pro Pro Trp Ser Asn Phe Tyr His Leu
    50                  55                  60
Asn Phe Gln Asn Asn Phe Leu Asn Ile Leu Tyr Pro Asn Thr Phe Leu
 65                 70                  75                  80
Asn Phe Ser His Ala Val Ser Leu His Leu Gly Asn Asn Lys Leu Gln
                85                  90                  95  96
```

<210> 1798
<211> 91
<212> PRT
<213> Homo sapiens

<400> 1798
Met Arg Pro Ala Leu Ala Val Gly Leu Val Phe Ala Gly Cys Cys Ser
1 5 10 15
Asn Val Ile Phe Leu Glu Leu Leu Ala Arg Lys His Pro Gly Cys Gly
20 25 30
Asn Ile Val Thr Phe Ala Gln Phe Leu Phe Ile Ala Val Glu Gly Phe
35 40 45
Leu Phe Glu Ala Asp Leu Gly Arg Lys Pro Pro Ala Ile Pro Ile Arg
50 55 60
Tyr Tyr Ala Ile Met Val Thr Met Phe Phe Thr Val Ser Val Val Asn
65 70 75 80
Asn Tyr Ala Leu Asn Leu Asn Ile Ala Met Pro
85 90 91

<210> 1799
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1799
Met Arg Ser Leu Val Trp Val Leu Ile Gln Gln Leu Thr Pro Leu Tyr
1 5 10 15
Lys Gly Glu Thr Trp Thr Gln Thr Cys Thr Glu Asp His Val Thr Met
20 25 30
Lys Ala Glu Ile Arg Val Met Leu Leu Glu Ala Arg Glu Asp Cys Gln
35 40 45
Leu Met Thr Lys Arg Ser Gln Glu Thr Gly Leu Gln Arg Ile Leu Pro
50 55 60
Glu Gly Ser Gln Lys Glu Pro Thr Leu Thr Thr Pro *
65 70 75 76

<210> 1800
<211> 182
<212> PRT
<213> Homo sapiens

<400> 1800
Met Ser Leu Lys Met Leu Ile Ser Arg Asn Lys Leu Ile Leu Leu Leu
1 5 10 15
Gly Ile Val Phe Phe Glu Arg Gly Lys Ser Ala Thr Leu Ser Leu Pro
20 25 30
Lys Ala Pro Ser Cys Gly Gln Ser Leu Val Lys Val Gln Pro Trp Asn

35 40 45
Tyr Phe Asn Ile Phe Ser Arg Ile Leu Gly Gly Ser Gln Val Glu Lys
50 55 60
Gly Ser Tyr Pro Trp Gln Val Ser Leu Lys Gln Arg Gln Lys His Ile
65 70 75 80
Cys Gly Gly Ser Ile Val Ser Pro Gln Trp Val Ile Thr Ala Ala His
85 90 95
Cys Ile Ala Asn Arg Asn Ile Val Ser Thr Leu Asn Val Thr Ala Gly
100 105 110
Glu Tyr Asp Leu Ser Gln Thr Asp Pro Gly Glu Gln Thr Leu Thr Ile
115 120 125
Glu Thr Val Ile Ile His Pro His Phe Ser Thr Lys Lys Pro Met Asp
130 135 140
Tyr Asp Ile Ala Leu Leu Lys Met Ala Gly Ala Phe Gln Phe Gly His
145 150 155 160
Phe Val Gly Pro Ile Cys Leu Pro Glu Leu Arg Glu Gln Phe Glu Ala
165 170 175
Gly Phe Ile Cys Thr Thr
180 182

<210> 1801
<211> 202
<212> PRT
<213> Homo sapiens

<400> 1801
Met Thr Glu Ala Thr Phe Asp Thr Leu Arg Leu Trp Leu Ile Ile Leu
1 5 10 15
Leu Cys Ala Leu Arg Leu Ala Met Met Arg Ser His Leu Gln Ala Tyr
20 25 30
Leu Asn Leu Ala Gln Lys Cys Val Asp Gln Met Lys Lys Glu Ala Gly
35 40 45
Arg Ile Ser Thr Val Glu Leu Gln Lys Met Val Ala Arg Val Phe Tyr
50 55 60
Tyr Leu Cys Val Ile Ala Leu Gln Tyr Val Ala Pro Leu Val Met Leu
65 70 75 80
Leu His Thr Thr Leu Leu Leu Lys Thr Leu Gly Asn His Ser Trp Gly
85 90 95
Ile Tyr Pro Glu Ser Ile Ser Thr Leu Pro Val Asp Asn Ser Leu Leu
100 105 110
Ser Asn Ser Val Tyr Ser Glu Leu Pro Ser Ala Glu Gly Lys Met Lys
115 120 125
His Asn Ala Arg Gln Gly Pro Ala Val Pro Pro Gly Met Gln Ala Tyr
130 135 140
Gly Ala Ala Pro Phe Glu Asp Leu Gln Leu Asp Phe Thr Glu Met Pro
145 150 155 160
Lys Cys Gly Asp Leu Ile Pro Arg Phe Gly Leu Pro Leu Arg Ile Gly
165 170 175
Ser Asp Asn Gly Leu Ala Phe Val Ala Asp Leu Val Gln Lys Thr Ala
180 185 190
Lys Trp Lys Gly Pro Gln Ile Val Val Leu
195 200 202

<210> 1802

<211> 172
<212> PRT
<213> Homo sapiens

<400> 1802
Met Asn Asn Phe Arg Ala Thr Ile Leu Phe Trp Ala Ala Ala Ala Trp
1 5 10 15
Ala Lys Ser Gly Lys Pro Ser Gly Glu Met Asp Glu Val Gly Val Gln
20 25 30
Lys Cys Lys Asn Ala Leu Lys Leu Pro Val Leu Glu Val Leu Pro Gly
35 40 45
Gly Gly Trp Asp Asn Leu Arg Asn Val Asp Met Gly Arg Val Met Glu
50 55 60
Leu Thr Tyr Ser Asn Cys Arg Thr Thr Glu Asp Gly Gln Tyr Ile Ile
65 70 75 80
Pro Asp Glu Ile Phe Thr Ile Pro Gln Lys Gln Ser Asn Leu Glu Met
85 90 95
Asn Ser Glu Ile Leu Glu Ser Trp Ala Asn Tyr Gln Ser Ser Thr Ser
100 105 110
Tyr Ser Ile Asn Thr Glu Leu Ser Leu Phe Ser Lys Val Asn Gly Lys
115 120 125
Phe Ser Thr Glu Phe Gln Arg Met Lys Thr Leu Gln Val Lys Asp Gln
130 135 140
Ala Ile Thr Thr Arg Val Gln Val Arg Asn Leu Val Tyr Thr Val Lys
145 150 155 160
Ile Asn Pro Thr Leu Glu Leu Ser Ser Gly Phe Arg
165 170 172

<210> 1803
<211> 158
<212> PRT
<213> Homo sapiens

<400> 1803
Met Ser Leu Arg Leu Gly Pro Ala Trp Arg His Leu Thr Cys Leu Gly
1 5 10 15
Thr Lys His Ser Lys Ala Asn Ser Val Leu Ala Ser Gln His Ala Gly
20 25 30
Phe Phe Val Ala Gln Gly Arg Trp Ala Ile His Arg Ala Phe Ser Ser
35 40 45
Arg Thr Ser Pro Thr Pro Pro Arg Gly Pro Leu Leu Leu Pro Gly Arg
50 55 60
His Pro Leu Leu Ser Arg Arg Arg Ala Gln Ala Ile Arg Ser Ser Thr
65 70 75 80
Arg Pro Ser Leu Pro Ala His Leu Phe Lys Pro Ala Pro Ala Ile Ala
85 90 95
Leu Ile Val Ser Pro Leu Arg Phe Pro Arg Arg Thr Ser Pro Cys His
100 105 110
Leu Ser Gly Pro Pro Ala Pro Pro Cys Arg Thr Leu His Thr Leu Leu
115 120 125
Arg Pro Val Cys Val Val Arg Arg Thr Pro Pro Val Phe Phe Thr Ser
130 135 140
Phe Thr Pro Ala Arg Ala Ala Val Ala Ser His Pro Thr Pro
145 150 155 158

<210> 1804
<211> 102
<212> PRT
<213> Homo sapiens

<400> 1804
Met Gly Leu Gly Gln Pro Gln Ala Trp Leu Leu Gly Leu Pro Thr Ala
1 5 10 15
Val Val Tyr Gly Ser Leu Ala Leu Phe Thr Thr Ile Leu His Asn Val
20 25 30
Phe Leu Leu Tyr Tyr Val Asp Thr Phe Val Ser Val Tyr Lys Ile Asn
35 40 45
Lys Met Ala Phe Trp Val Gly Glu Thr Val Phe Leu Leu Trp Asn Ser
50 55 60
Leu Asn Asp Pro Leu Phe Gly Trp Leu Ser Asp Arg Gln Phe Leu Ser
65 70 75 80
Ser Gln Pro Arg Ser Gly Ala Gly Leu Ser Ser Arg Ala Val Val Leu
85 90 95
Ala Arg Val Gln Ala Leu
100 102

<210> 1805
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1805
Met Ala Asp Ser Val Leu Thr Leu Val Phe Thr Ser Cys Leu Leu Ser
1 5 10 15
Glu Leu Ser Leu Val Cys Ser Asp Phe Arg Pro Thr Pro Ile Ser Tyr
20 25 30
Gln Ser Arg Tyr Gly Ser Gly Asp Gly Trp Ile Arg Cys Lys Ser Glu
35 40 45
Val Arg Glu Thr Gln *
50 53

<210> 1806
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1806
Met Leu Ser Val Lys Arg Phe Arg Ala Met Val Met Phe Phe Met Ala
1 5 10 15
Met Val Ala Met Met Lys Asn Lys Cys Gln Gln Thr Asn Glu Ala Lys
20 25 30
Phe Cys Val His Met Tyr Leu His Phe Tyr Phe Ser Ser His Ser Ser
35 40 45
Ala Val Cys Ile Ser Ser Pro Leu
50 55 56

<210> 1807
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1807
Met Gln Ser Met Ile Asn Met Ile Val Ser Leu Leu Gly Leu Val Ala
1 5 10 15
Thr Val Thr Leu Ile Pro Ala Phe Arg Gly His Phe Ile Ala Ala Arg
20 25 30
Leu Gly Gly Gln Ser Leu Gly Lys Thr Ser Arg Gln His Met *
35 40 45 46

<210> 1808
<211> 119
<212> PRT
<213> Homo sapiens

<400> 1808
Met Ala Ala Ser Leu Leu Ala Val Leu Leu Leu Leu Leu Leu Glu Arg
1 5 10 15
Gly Met Phe Ser Ser Pro Ser Pro Pro Pro Ala Leu Leu Glu Lys Val
20 25 30
Phe Gln Tyr Ile Asp Leu His Gln Asp Glu Phe Val Gln Thr Leu Lys
35 40 45
Glu Trp Val Ala Ile Glu Ser Asp Ser Val Gln Pro Val Pro Arg Phe
50 55 60
Arg Gln Glu Leu Phe Arg Met Met Ala Val Ala Ala Asp Thr Leu Gln
65 70 75 80
Arg Leu Gly Ala Arg Val Ala Ser Val Asp Met Gly Pro Gln Gln Leu
85 90 95
Pro Asp Gly Gln Ser Leu Pro Ile Pro Pro Val Ile Leu Ala Glu Leu
100 105 110
Gly Ser Asp Pro Thr Lys Gly
115 119

<210> 1809
<211> 91
<212> PRT
<213> Homo sapiens

<400> 1809
Met Ser Arg Ser His Val Ala Leu Leu Gly Leu Ser Leu Leu Leu Met
1 5 10 15
Leu Leu Leu Tyr Ala Gly Leu Pro Ser Pro Pro Glu Gln Thr Ser Cys
20 25 30
Leu Trp Gly Asp Pro Asn Val Thr Val Leu Ala Val Ser Thr Pro Ala
35 40 45
Asn Ser Pro Met Phe Tyr Leu Glu Gly Leu Pro Leu His Leu Ala His

50 55 60
Arg Val Asp Val Ile Pro Leu Ser Ser Leu Gly Pro Leu Val Ser Pro
65 70 75 80
Leu Arg Cys Gln Ala Leu Pro Pro Arg Leu Ser
85 90 91

<210> 1810
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1810
Met Leu Leu Phe Gly Leu Cys Trp Gly Pro Tyr Val Ala Thr Leu Leu
1 5 10 15
Leu Ser Val Leu Ala Tyr Glu Gln Arg Pro Pro Leu Gly Pro Gly Thr
20 25 30
Leu Leu Ser Leu Leu Ser Leu Gly Ser Ala Lys Ala Ala Ala Val Pro
35 40 45
Val Ala Met Gly Leu Gly Asp Gln Arg Tyr
50 55 58

<210> 1811
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1811
Met Ala Ser Ala Ser Phe Ser Leu Leu Ile Cys Gly Phe Leu Ala Ser
1 5 10 15
Leu Ser Leu Gln Arg Ile Glu Glu Leu Gly Leu Gly Leu Gly Leu Gly
20 25 30
Phe Gly Leu Arg Glu Cys Cys Gly Trp Phe Gly Leu Leu Ser Leu Val
35 40 45 48

<210> 1812
<211> 84
<212> PRT
<213> Homo sapiens

<400> 1812
Met Lys Val Leu Leu Ala Val Ala Leu Ile Ala Arg Thr Val Phe Phe
1 5 10 15
Leu Leu Leu Ala Gly Pro Ser Ala Ala Asp Asp Lys Lys Lys Gly Pro
20 25 30
Lys Val Thr Val Lys Val Tyr Phe Asp Leu Arg Ile Gly Asp Glu Asp
35 40 45
Val Arg Arg Glu Ile Phe Gly Leu Phe Gly Lys Thr Ala Pro Lys Thr
50 55 60

```
Glu Asp Asn Phe Val Ala Leu Ala Thr Gly Gln Lys Gly Phe Gly Tyr
 65                 70                  75                  80
Lys Asn Ser  *
        83
```

<210> 1813
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1813

```
Met Ala Ala Ala Asp Asp Thr Ile Leu Gly Phe Arg Ala Ala Leu Leu
  1               5                  10                  15
Ile Leu Val Ala Ala Ala Ala Ala Leu Ser Pro Lys Val Ala Cys Arg
             20                  25                  30
Val Gly Thr Val Arg Arg Arg Glu Thr Pro Gln Pro Ser Ala
        35                  40                  45  46
```

<210> 1814
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1814

```
Met Ile Ile Tyr Leu Thr Phe Pro Val Ala Met Phe Trp Val Ser Asn
  1               5                  10                  15
Gln Ala Glu Trp Phe Glu Asp Asp Val Ile Gln Arg Lys Arg Glu Leu
             20                  25                  30
Trp Pro Pro Glu Lys Leu Gln Glu Ile Glu Glu Phe Lys Glu Arg Leu
        35                  40                  45
Arg Lys Arg Arg Glu Glu Lys Leu Leu Arg Asp Ala Gln Gln Asn Ser
    50                  55                  60                  64
 *
```

<210> 1815
<211> 100
<212> PRT
<213> Homo sapiens

<400> 1815

```
Met Phe Lys Ser Lys Leu Leu Asn Phe Tyr Ile Phe Val Asn Cys Met
  1               5                  10                  15
Asn Phe Leu Met Leu Ser Ile Ala Ser Phe Asn Pro Phe Trp Ser Glu
             20                  25                  30
Ile Ile Val Cys Asn Ile Gln Phe Phe Tyr Tyr Thr Leu Ser Ser Arg
        35                  40                  45
Val His Val Gln Asn Val Gln Val Cys Tyr Thr Gly Ile His Val Pro
    50                  55                  60
Cys Trp Phe Ala Ala Pro Ile Asn Ser Ser Phe Thr Leu Gly Ile Ser
```

```
 65                  70                  75                  80
Pro Asn Ala Ile Pro Phe Ile Val Pro His Pro Gln Thr Gly Pro Asn
                 85                  90                  95
Val Arg Cys Ser
            100
```

<210> 1816
<211> 115
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(115)
<223> Xaa = any amino acid or nothing

<400> 1816

```
Met Phe Cys Phe Leu Val Ser Val Leu Tyr Ser Lys Ala Lys Leu Ala
  1               5                  10                  15
Ser Ala Cys Gly Gly Ile Ile Tyr Phe Leu Ser Tyr Val Pro Tyr Met
             20                  25                  30
Tyr Val Ala Ile Arg Glu Glu Val Ala His Asp Lys Ile Thr Ala Phe
         35                  40                  45
Glu Lys Cys Ile Ala Ser Leu Met Ser Thr Thr Ala Phe Gly Leu Gly
     50                  55                  60
Ser Lys Tyr Phe Ala Leu Tyr Glu Val Pro Gly Val Gly Ile Gln Trp
 65                  70                  75                  80
His Thr Phe Ser Gln Ser Pro Val Glu Gly Glu Asp Leu Asn Leu Pro
                 85                  90                  95
Pro Pro Pro Pro Met Met Pro Ala Pro Xaa Val Val Tyr Gly Ile Leu
            100                 105                 110
Thr Lys  *
    114
```

<210> 1817
<211> 144
<212> PRT
<213> Homo sapiens

<400> 1817

```
Met Val Leu Gly Leu Leu Val Gln Ile Trp Ala Leu Gln Glu Ala Ser
  1               5                  10                  15
Ser Leu Ser Val Gln Gln Gly Pro Asn Leu Leu Gln Val Arg Gln Gly
             20                  25                  30
Ser Gln Ala Thr Leu Val Cys Gln Val Asp Gln Ala Thr Ala Trp Glu
         35                  40                  45
Arg Leu Arg Val Lys Trp Thr Lys Asp Gly Ala Ile Leu Cys Gln Pro
     50                  55                  60
Tyr Ile Thr Asn Gly Ser Leu Ser Leu Gly Val Cys Gly Pro Gln Gly
 65                  70                  75                  80
Arg Leu Ser Trp Gln Ala Pro Ser His Leu Thr Leu Gln Leu Asp Pro
                 85                  90                  95
Val Ser Leu Asn His Ser Gly Ala Tyr Val Cys Trp Ala Ala Val Glu
            100                 105                 110
```

```
Ile Pro Glu Leu Glu Glu Ala Glu Gly Asn Ile Thr Arg Leu Phe Val
        115                 120                 125
Asp Pro Asp Asp Pro Thr Gln Asn Arg Asn Arg Ile Ala Ser Phe Pro
    130                 135                 140             144
```

```
<210> 1818
<211> 115
<212> PRT
<213> Homo sapiens
```

```
<400> 1818
Met Gln Ala Asp Arg Gly Gly Val Leu Phe Leu Val Ala Leu Pro Gly
  1               5                  10                  15
Leu Trp Glu Thr Val Leu Arg His Pro Gly Ala Ser Pro Glu Pro Val
             20                  25                  30
Ser Leu His Thr Gly Leu Ala Ala Glu Pro Leu Leu Gly Trp Arg Ala
         35                  40                  45
Glu Val Ala Thr Ala Ala Gly Leu Gln Asp Arg Arg Ile Gly Arg Arg
     50                  55                  60
Ser Leu Pro Ala Thr Leu Pro Pro Pro Phe Pro Gln Ala Gly Asp Leu
 65                  70                  75                  80
Arg Glu Ser Ile Leu Leu Leu Pro Cys Arg Glu Ser Arg Ser Thr Ser
                 85                  90                  95
Trp Leu Ser Pro Tyr Trp Val Pro Glu Ile Pro Gly Thr Leu His Asp
            100                 105                 110
Arg Gly Arg
        115
```

```
<210> 1819
<211> 70
<212> PRT
<213> Homo sapiens
```

```
<400> 1819
Met Pro Trp Leu Leu Ser Ala Pro Lys Leu Val Pro Ala Val Ala Asn
  1               5                  10                  15
Val Arg Gly Leu Ser Gly Cys Met Leu Cys Ser Gln Arg Arg Tyr Ser
             20                  25                  30
Leu Gln Pro Val Pro Glu Arg Arg Ile Pro Asn Arg Tyr Leu Gly Gln
         35                  40                  45
Pro Ser Pro Phe Thr His Pro His Leu Leu Arg Pro Asp Ser Asn Ser
     50                  55                  60
Cys Trp Glu Val Gly  *
 65              69
```

```
<210> 1820
<211> 635
<212> PRT
<213> Homo sapiens
```

<400> 1820

```
Met Leu Arg Ser Leu Leu Val Tyr Met Leu Phe Leu Leu Val Thr Leu
 1               5                  10                  15
Leu Ala Ser Tyr Gly Asp Ala Ser Cys His Gly His Ala Tyr Arg Leu
            20                  25                  30
Gln Ser Ala Ile Lys Gln Glu Leu His Ser Arg Ala Phe Leu Ala Ile
        35                  40                  45
Thr Arg Ser Glu Glu Leu Trp Pro Trp Met Ala His Val Leu Leu Pro
    50                  55                  60
Tyr Val His Gly Asn Gln Ser Ser Pro Glu Leu Gly Pro Pro Arg Leu
65                  70                  75                  80
Arg Gln Val Arg Leu Gln Glu Ala Leu Tyr Pro Asp Pro Pro Gly Pro
                85                  90                  95
Arg Val His Thr Cys Ser Ala Ala Gly Gly Phe Ser Thr Ser Asp Tyr
            100                 105                 110
Asp Val Gly Trp Glu Ser Pro His Asn Gly Ser Gly Thr Trp Ala Tyr
        115                 120                 125
Ser Ala Pro Asp Leu Leu Gly Ala Trp Ser Trp Gly Ser Cys Ala Val
    130                 135                 140
Tyr Asp Ser Gly Gly Tyr Val Gln Glu Leu Gly Leu Ser Leu Glu Glu
145                 150                 155                 160
Ser Arg Asp Arg Leu Arg Phe Leu Gln Leu His Asn Trp Leu Asp Asn
                165                 170                 175
Arg Ser Arg Ala Val Phe Leu Glu Leu Thr Arg Tyr Ser Pro Ala Val
            180                 185                 190
Gly Leu His Ala Ala Val Thr Leu Arg Leu Glu Phe Pro Ala Ala Gly
        195                 200                 205
Arg Ala Leu Ala Ala Leu Ser Val Arg Pro Phe Ala Leu Arg Arg Leu
    210                 215                 220
Ser Ala Gly Leu Ser Leu Pro Leu Leu Thr Ser Val Cys Leu Leu Leu
225                 230                 235                 240
Phe Ala Val His Phe Ala Val Ala Glu Ala Arg Thr Trp His Arg Glu
                245                 250                 255
Gly Arg Trp Arg Val Leu Arg Leu Gly Ala Trp Ala Arg Trp Leu Leu
            260                 265                 270
Val Ala Leu Thr Ala Ala Thr Ala Leu Val Arg Leu Ala Gln Leu Gly
        275                 280                 285
Ala Ala Asp Arg Gln Trp Thr Arg Phe Val Arg Gly Arg Pro Arg Arg
    290                 295                 300
Phe Thr Ser Phe Asp Gln Val Ala His Val Ser Ser Ala Ala Arg Gly
305                 310                 315                 320
Leu Ala Ala Ser Leu Leu Phe Leu Leu Leu Val Lys Ala Ala Gln His
                325                 330                 335
Val Arg Phe Val Arg Gln Trp Ser Val Phe Gly Lys Thr Leu Cys Arg
            340                 345                 350
Ala Leu Pro Glu Leu Leu Gly Val Thr Leu Gly Leu Val Val Leu Gly
        355                 360                 365
Val Ala Tyr Ala Gln Leu Ala Ile Leu Leu Val Ser Ser Cys Val Asp
    370                 375                 380
Ser Leu Trp Ser Val Ala Gln Ala Leu Leu Val Leu Cys Pro Gly Thr
385                 390                 395                 400
Gly Leu Ser Thr Leu Cys Pro Ala Glu Ser Trp His Leu Ser Pro Leu
                405                 410                 415
Leu Cys Val Gly Leu Trp Ala Leu Arg Leu Trp Gly Ala Leu Arg Leu
            420                 425                 430
Gly Ala Val Ile Leu Arg Trp Arg Tyr His Ala Leu Arg Gly Glu Leu
        435                 440                 445
```

Tyr Arg Pro Ala Trp Glu Pro Gln Asp Tyr Glu Met Val Glu Leu Phe
450 455 460
Leu Arg Arg Leu Arg Leu Trp Met Gly Leu Ser Lys Val Lys Glu Phe
465 470 475 480
Arg His Lys Val Arg Phe Glu Gly Met Glu Pro Leu Pro Ser Arg Ser
485 490 495
Ser Arg Gly Ser Lys Val Ser Pro Asp Val Pro Pro Pro Ser Ala Gly
500 505 510
Ser Asp Ala Ser His Pro Ser Thr Ser Ser Ser Gln Leu Asp Gly Leu
515 520 525
Ser Val Ser Leu Gly Arg Leu Gly Thr Arg Cys Glu Pro Glu Pro Ser
530 535 540
Arg Leu Gln Ala Val Phe Glu Ala Leu Leu Thr Gln Phe Asp Arg Leu
545 550 555 560
Asn Gln Ala Thr Glu Asp Val Tyr Gln Leu Glu Gln Gln Leu His Ser
565 570 575
Leu Gln Gly Arg Arg Ser Ser Arg Ala Pro Ala Gly Ser Ser Arg Gly
580 585 590
Pro Ser Pro Gly Leu Arg Pro Ala Leu Pro Ser Arg Leu Ala Arg Ala
595 600 605
Ser Arg Gly Val Asp Leu Ala Thr Gly Pro Ser Arg Thr Pro Leu Arg
610 615 620
Ala Lys Asn Lys Val His Pro Ser Ser Thr *
625 630 634

<210> 1821
<211> 84
<212> PRT
<213> Homo sapiens

<400> 1821
Met Gly Ser Thr Trp Gly Ser Pro Gly Trp Val Arg Leu Ala Leu Cys
1 5 10 15
Leu Thr Gly Leu Met Leu Ser Leu Tyr Thr Leu His Val Lys Ala Ala
20 25 30
Arg Ala Arg Asn Arg Asp Tyr Arg Ala Leu Cys Asp Val Gly Thr Val
35 40 45
Ile Ser Cys Thr Arg Val Phe Tyr Ser Lys Leu Pro Ala Asp Thr Leu
50 55 60
Asp Leu Cys Pro Asp Ala Ala Glu Leu Pro Gly Val Ser Arg Trp Phe
65 70 75 80
Cys Leu Pro Gly
84

<210> 1822
<211> 108
<212> PRT
<213> Homo sapiens

<400> 1822
Met Ala Leu Asp Phe Val Asn Val Leu Leu Cys Gln Leu Ala Glu Val
1 5 10 15
Thr Leu Gly Val Leu Arg Glu Glu Gly Ala Ser Leu Leu Val Ala Leu

```
            20                  25                  30
Gly Ser Ala Leu Phe Pro Ser Ala Ala Ala Val Gly Lys Gln Gly Ser
        35                  40                  45
Met Gly Val Thr Ser His Met Gln Cys Pro Val Cys Gln His Pro Arg
    50                  55                  60
Asp Val Leu Leu Ala Ser Pro Val Ser His Ser His Ala Cys Gln Pro
65                  70                  75                  80
Gln Pro Ala Gly Cys Ser Asn Cys His Leu Gly His Leu Thr Arg Ser
                85                  90                  95
Pro Pro Phe Gln Gly Leu Leu Pro Leu Leu Gln  *
            100                 105     107
```

<210> 1823
<211> 74
<212> PRT
<213> Homo sapiens

<400> 1823

```
Met Gly Val Val Leu Tyr Val Met Leu Cys Ala Ser Leu Pro Phe Asp
 1              5                   10                  15
Asp Thr Asp Ile Pro Lys Met Leu Trp Gln Gln Gln Lys Gly Val Ser
            20                  25                  30
Phe Pro Thr His Leu Ser Ile Ser Ala Asp Cys Gln Asp Leu Leu Lys
        35                  40                  45
Arg Leu Leu Glu Pro Asp Met Ile Leu Arg Pro Ser Ile Glu Glu Val
    50                  55                  60
Ser Trp His Pro Trp Leu Ala Ser Thr  *
65                  70          73
```

<210> 1824
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1824

```
Met Ser Leu Ser Cys Thr Gly Phe Ala Leu Glu Lys Arg Cys Ala Gly
 1              5                   10                  15
Trp Val Trp Trp Leu Thr Pro Val Ile Pro Ala Leu Leu Gly Gly Gln
            20                  25                  30
Gly Arg Gln Ile Met Ile Met Val Arg Ser Leu Arg Pro Ala Gly Pro
        35                  40                  45
Thr Trp Gly Asn Leu Ser Thr Thr Lys Thr
    50                  55          58
```

<210> 1825
<211> 225
<212> PRT
<213> Homo sapiens

<400> 1825

```
Met Ala Cys Lys Gly Leu Leu Gln Gln Val Gln Gly Pro Arg Leu Pro
 1               5                  10                  15
Trp Thr Arg Leu Leu Leu Leu Leu Leu Val Phe Ala Val Gly Phe Leu
            20                  25                  30
Cys His Asp Leu Arg Ser His Ser Ser Phe Gln Ala Ser Leu Thr Gly
        35                  40                  45
Arg Leu Leu Arg Ser Ser Gly Phe Leu Pro Ala Ser Gln Gln Ala Cys
    50                  55                  60
Ala Lys Leu Tyr Ser Tyr Ser Leu Gln Gly Tyr Ser Trp Leu Gly Glu
65                  70                  75                      80
Thr Leu Pro Leu Trp Gly Ser His Leu Leu Thr Val Val Arg Pro Ser
                85                  90                  95
Leu Gln Leu Ala Trp Ala His Thr Asn Ala Thr Val Ser Phe Leu Ser
            100                 105                 110
Ala His Cys Ala Ser His Leu Ala Trp Phe Gly Asp Ser Leu Thr Ser
        115                 120                 125
Leu Ser Gln Arg Leu Gln Ile Gln Leu Pro Asp Ser Val Asn Gln Leu
    130                 135                 140
Leu Arg Tyr Leu Arg Glu Leu Pro Leu Leu Phe His Gln Asn Val Leu
145                 150                 155                     160
Leu Pro Leu Trp His Leu Leu Leu Glu Ala Leu Ala Trp Ala Gln Glu
                165                 170                 175
His Cys His Glu Ala Cys Arg Gly Glu Val Thr Trp Asp Cys Met Lys
            180                 185                 190
Thr Gln Leu Ser Glu Ala Val His Trp Thr Trp Leu Cys Leu Gln Asp
        195                 200                 205
Ile Thr Val Ala Phe Leu Asp Trp Ala Leu Ala Leu Ile Ser Gln Gln
    210                 215                 220                 224
 *
```

```
<210> 1826
<211> 119
<212> PRT
<213> Homo sapiens


<400> 1826
Met Tyr Arg Glu Val Cys Ser Ile Arg Phe Leu Phe Thr Ala Val Ser
 1               5                  10                  15
Leu Leu Ser Leu Phe Leu Ser Ala Phe Trp Leu Gly Leu Leu Tyr Leu
            20                  25                  30
Val Ser Pro Leu Glu Asn Glu Pro Lys Glu Met Leu Thr Leu Ser Glu
        35                  40                  45
Tyr His Glu Arg Ala Arg Ser Gln Gly Gln Gln Leu Leu Gln Phe Gln
    50                  55                  60
Ala Glu Leu Asp Lys Leu His Lys Glu Ala Ser Leu Val Cys Gly Cys
65                  70                  75                      80
Pro Ser Leu Arg Glu Val Pro Ser Ser Ala Val Ser Arg Leu Glu Pro
                85                  90                  95
Pro Ser Ile Ala Gln Pro Leu Leu Ser Arg Leu Gln Leu Tyr Leu Ser
            100                 105                 110
Asp Pro Ser Ser Tyr Leu Val
        115             119
```

<210> 1827
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1827
Met Lys Leu Met Arg Pro Leu Met Leu Leu Tyr Ile Ser Gln Leu Tyr
1 5 10 15
Met Leu Met Lys Arg Asn Ser Pro His Ile Gly Asp Cys Leu Ser Leu
20 25 30
Leu Phe Leu Gln Glu Lys Lys Gln Lys Glu Val Tyr Thr Leu Leu Ala
35 40 45
Met Met Gln Val Ser Phe Ile Leu Val *
50 55 57

<210> 1828
<211> 102
<212> PRT
<213> Homo sapiens

<400> 1828
Met Gln Pro Ser Gly Leu Glu Gly Pro Gly Thr Phe Gly Arg Trp Pro
1 5 10 15
Leu Leu Ser Leu Leu Leu Leu Leu Leu Leu Leu Gln Pro Val Thr Cys
20 25 30
Ala Tyr Thr Thr Pro Gly Pro Pro Arg Ala Leu Thr Thr Leu Gly Ala
35 40 45
Pro Arg Ala His Thr Met Pro Gly Thr Tyr Ala Pro Ser Thr Thr Leu
50 55 60
Ser Ser Pro Ser Thr Gln Gly Leu Gln Glu Gln Ala Arg Ala Leu Met
65 70 75 80
Arg Asp Phe Pro Leu Val Asp Gly His Asn Asp Leu Pro Leu Val Leu
85 90 95
Arg Gln Val Tyr His Asn
100 102

<210> 1829
<211> 88
<212> PRT
<213> Homo sapiens

<400> 1829
Met Arg Lys Ile Tyr Thr Thr Val Leu Phe Ala Asn Ile Tyr Leu Ala
1 5 10 15
Pro Leu Ser Leu Ile Val Ile Met Tyr Gly Arg Ile Gly Ile Ser Leu
20 25 30
Phe Arg Ala Ala Val Pro His Thr Gly Arg Lys Asn Gln Glu Gln Trp
35 40 45
His Val Val Ser Arg Lys Lys Gln Lys Ile Ile Lys Met Leu Leu Ile
50 55 60
Val Ala Leu Leu Phe Ile Leu Ser Trp Leu Pro Leu Trp Thr Leu Met
65 70 75 80

Met Leu Ser Asp Tyr Ala Lys Pro
85 88

<210> 1830
<211> 120
<212> PRT
<213> Homo sapiens

<400> 1830
Met Lys Trp Arg Arg Lys Ser Ala Tyr Trp Lys Ala Leu Lys Val Phe
1 5 10 15
Lys Leu Pro Val Glu Phe Leu Leu Leu Leu Thr Val Pro Val Val Asp
20 25 30
Pro Asp Lys Asp Asp Gln Asn Trp Lys Arg Pro Leu Asn Cys Leu His
35 40 45
Leu Val Ile Ser Pro Leu Val Val Val Leu Thr Leu Gln Ser Gly Thr
50 55 60
Tyr Gly Val Tyr Glu Ile Gly Gly Leu Val Pro Val Trp Val Val Val
65 70 75 80
Val Ile Ala Gly Thr Ala Leu Ala Ser Val Thr Phe Phe Ala Thr Ser
85 90 95
Asp Ser Gln Pro Pro Arg Leu His Trp Leu Phe Ala Phe Leu Gly Phe
100 105 110
Leu Thr Ser Ala Leu Trp Ile Asn
115 120

<210> 1831
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1831
Met Phe Trp Arg Gly Trp Gly Ala Pro Leu Trp Ala Trp Pro Thr Leu
1 5 10 15
Leu Thr Pro Ile Lys Cys Ser Ser Leu Tyr Asp Ser Phe Phe Ser Pro
20 25 30
Thr Asp Ala Leu Gly Leu Glu Ser Leu Leu Gly Thr Ala Ser Leu Trp
35 40 45
Pro Leu Leu Leu Ser Leu Thr Glu Leu Pro Ala Leu Leu Gln Met *
50 55 60 63

<210> 1832
<211> 89
<212> PRT
<213> Homo sapiens

<400> 1832
Met Gly Ile Lys His Phe Ser Gly Leu Phe Val Leu Leu Cys Ile Gly
1 5 10 15
Phe Gly Leu Ser Ile Leu Thr Thr Ile Gly Glu His Ile Val Tyr Arg

20 25 30
Leu Leu Leu Pro Arg Ile Lys Asn Lys Ser Lys Leu Gln Tyr Trp Leu
35 40 45
His Thr Ser Gln Arg Leu His Arg Ala Ile Asn Thr Ser Phe Ile Glu
50 55 60
Glu Lys Gln Gln His Phe Lys Thr Lys Arg Val Glu Lys Arg Ser Asn
65 70 75 80
Val Gly Pro Arg Gln Leu Thr Val Trp
85 89

<210> 1833
<211> 60
<212> PRT
<213> Homo sapiens

<400> 1833
Met Phe Leu Val Ser Ile Ile Cys Val Thr Leu Phe Phe Pro Ile Val
1 5 10 15
Ala Leu Phe Asp Leu Tyr Ala Thr Leu Ala His Cys Val Tyr Ala Phe
20 25 30
Ser Thr Asp Ser Leu Leu Pro Ala Val Met Leu Thr Ala Leu Pro Arg
35 40 45
Ser Leu Phe Phe Ser Ser Ser Leu Ile Leu Ser Ser
50 55 60

<210> 1834
<211> 62
<212> PRT
<213> Homo sapiens

<400> 1834
Met Val Pro Ala Ala Gly Ala Leu Leu Trp Val Leu Leu Leu Asn Leu
1 5 10 15
Gly Pro Arg Ala Ala Gly Ala Gln Gly Leu Thr Gln Thr Pro Thr Glu
20 25 30
Met Gln Arg Val Met Leu Arg Phe Gly Cys Ser Val Ile Cys Cys Tyr
35 40 45
Cys Ile Ser Val Arg Thr Gly Arg Ser Arg Glu Thr Gly *
50 55 60 61

<210> 1835
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1835
Met Leu Leu Lys Ile Leu Lys Gly Cys Val Val Phe His His Leu Pro
1 5 10 15
Cys Ser Thr Gln Val Tyr Lys Pro Ser Leu Gly Met Trp Gly Phe Leu
20 25 30

```
Ser Pro Leu Trp Glu Val Val Phe Cys His Thr Pro Cys Phe Arg Ala
        35                  40                  45
Gln Pro Gln Leu Asp Arg Ala Gly Ser Ser Phe Leu Ile Tyr Pro Ser
    50                  55                  60
Pro His Ser Thr Ser Asn  *
65                  70
```

<210> 1836
<211> 110
<212> PRT
<213> Homo sapiens

<400> 1836

```
Met Leu Met Tyr Met Phe Tyr Val Leu Pro Phe Cys Gly Leu Ala Ala
  1               5                  10                  15
Tyr Ala Leu Thr Phe Pro Gly Cys Ser Trp Leu Pro Asp Trp Ala Leu
            20                  25                  30
Val Phe Ala Gly Gly Ile Gly Gln Ala Gln Phe Ser His Met Gly Ala
        35                  40                  45
Ser Met His Leu Arg Thr Pro Phe Thr Tyr Arg Val Pro Glu Asp Thr
    50                  55                  60
Trp Gly Cys Phe Phe Val Cys Asn Leu Leu Tyr Ala Leu Gly Pro His
65                  70                  75                  80
Leu Leu Ala Tyr Arg Cys Leu Gln Trp Pro Ala Phe Phe His Gln Pro
                85                  90                  95
Pro Pro Ser Asp Pro Leu Ala Leu His Lys Lys Gln His  *
            100                 105             109
```

<210> 1837
<211> 91
<212> PRT
<213> Homo sapiens

<400> 1837

```
Met Leu Leu Leu Leu Thr Trp Pro Tyr Ile Leu Leu Gly Phe Leu Phe
  1               5                  10                  15
Cys Ala Phe Val Val Val Asn Gly Gly Ile Val Ile Gly Asp Arg Ser
            20                  25                  30
Ser His Glu Ala Cys Leu His Phe Pro Gln Leu Phe Tyr Phe Phe Ser
        35                  40                  45
Phe Thr Leu Phe Phe Ser Phe Pro His Leu Leu Ser Pro Ser Lys Ile
    50                  55                  60
Lys Thr Phe Leu Ser Leu Val Trp Lys Arg Arg Ile Leu Phe Phe Val
65                  70                  75                  80
Val Thr Leu Val Ser Val Phe Leu Val Trp Asn
                85                  90  91
```

<210> 1838
<211> 201
<212> PRT
<213> Homo sapiens

<400> 1838
Met Pro Ile Gly Leu Arg Gly Leu Met Ile Ala Val Met Leu Ala Ala
1 5 10 15
Leu Met Ser Ser Leu Thr Ser Ile Phe Asn Ser Ser Ser Thr Leu Phe
20 25 30
Thr Met Asp Ile Trp Arg Arg Leu Arg Pro Arg Ser Gly Glu Arg Glu
35 40 45
Leu Leu Leu Val Gly Arg Leu Val Ile Val Ala Leu Ile Gly Val Ser
50 55 60
Val Ala Trp Ile Pro Val Leu Gln Asp Ser Asn Ser Gly Gln Leu Phe
65 70 75 80
Ile Tyr Met Gln Ser Val Thr Ser Ser Leu Ala Pro Pro Val Thr Ala
85 90 95
Val Phe Val Leu Gly Val Phe Trp Arg Arg Ala Asn Glu Gln Gly Ala
100 105 110
Phe Trp Gly Leu Ile Ala Gly Leu Val Val Gly Ala Thr Arg Leu Val
115 120 125
Leu Glu Phe Leu Asn Pro Ala Pro Pro Cys Gly Glu Pro Asp Thr Arg
130 135 140
Pro Ala Val Leu Gly Ser Ile His Tyr Leu His Phe Ala Val Ala Leu
145 150 155 160
Phe Ala Leu Ser Gly Ala Val Val Val Ala Gly Ser Leu Leu Thr Pro
165 170 175
Pro Pro Gln Ser Val Gln Ile Glu Asn Leu Thr Trp Trp Thr Leu Ala
180 185 190
Gln Asp Val Pro Leu Gly Thr Lys Ala
195 200 201

<210> 1839
<211> 130
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(130)
<223> Xaa = any amino acid or nothing

<400> 1839
Met Leu Phe Phe Leu Gln Ser Leu Phe Met Leu Ala Thr Val Val Leu
1 5 10 15
Tyr Phe Ser His Leu Lys Glu Tyr Val Ala Ser Met Val Phe Ser Leu
20 25 30
Ala Leu Gly Trp Thr Asn Met Leu Tyr Tyr Thr Arg Gly Phe Gln Gln
35 40 45
Met Gly Ile Tyr Ala Val Met Ile Glu Lys Met Ile Leu Arg Asp Leu
50 55 60
Cys Arg Phe Met Phe Val Tyr Ile Val Phe Leu Phe Gly Phe Ser Thr
65 70 75 80
Ala Val Val Thr Leu Ile Glu Asp Gly Lys Asn Asp Ser Leu Pro Ser
85 90 95
Glu Ser Thr Ser His Arg Trp Arg Gly Phe Ser Xaa Thr Pro Leu Xaa
100 105 110
Leu Leu His Lys Leu Tyr Ser Thr Cys Leu Glu Leu Ser Asn Ser Thr
115 120 125

Xaa Asp
130

<210> 1840
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1840
Met Asn Arg Val Met Arg Gly Leu Ala Ile Thr Thr Thr Cys Leu Leu
1 5 10 15
Ser Met Leu Gln Ala Ile Thr Ile Ser Pro Ser Ile Leu Trp Asn His
20 25 30
Ala Ala Val Gln Tyr Val His Gly His Ser Leu Val Gln Ala *
35 40 45 46

<210> 1841
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1841
Met Thr Ala Arg Leu Met Arg Ser Leu Leu Ala Ala Gln Leu Thr Phe
1 5 10 15
Val Tyr Arg Val Ala His Leu Met Asn Val Ala Gln Arg Ile Arg Gly
20 25 30
Asn Arg Pro Ile Lys Asn Glu Arg Leu Leu Ala Leu Leu Gly Asp Asn
35 40 45
Glu Lys Met Asn Leu Ser Asp Val Glu Leu Ile Pro Leu Pro Leu Glu
50 55 60
Pro Gln Val Lys Ile Arg Gly Ile Ile Pro Glu Thr Ala Thr Leu Phe
65 70 75 80
Lys Ser
82

<210> 1842
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1842
Met Val Ala Asn Met Phe Tyr Ile Val Val Ile Met Ala Leu Val Leu
1 5 10 15
Leu Ser Phe Gly Val Pro Arg Lys Ala Ile Leu Tyr Pro His Glu Ala
20 25 30
Pro Ser Trp Thr Leu Ala Lys Asp Ile Val Phe His Pro Tyr Trp Met
35 40 45
Ile Phe Gly Glu Val Tyr Ala Tyr Glu Ile Asp Val Cys Ala Asn Asp
50 55 60
Ser Val Ile Pro Gln Ile Cys Gly Pro Ser Thr Arg Pro

65 70 75 77

<210> 1843
<211> 109
<212> PRT
<213> Homo sapiens

<400> 1843
Met Met His Asn Ile Ile Val Lys Glu Leu Ile Val Thr Phe Phe Leu
1 5 10 15
Gly Ile Thr Val Val Gln Met Leu Ile Ser Val Thr Gly Leu Lys Gly
20 25 30
Val Glu Ala Gln Asn Gly Ser Glu Ser Glu Val Phe Val Gly Lys Tyr
35 40 45
Glu Thr Leu Val Phe Tyr Trp Pro Ser Leu Leu Cys Leu Ala Phe Leu
50 55 60
Leu Gly Arg Phe Leu His Met Phe Val Lys Ala Leu Arg Val His Leu
65 70 75 80
Gly Trp Glu Leu Gln Val Glu Glu Lys Ser Val Leu Glu Val His Gln
85 90 95
Gly Glu His Val Lys Gln Leu Leu Arg Ile Pro Arg Pro
100 105 109

<210> 1844
<211> 85
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(85)
<223> Xaa = any amino acid or nothing

<400> 1844
Met Thr Ile His Leu Cys Ser Asn Leu Met Cys His Phe Leu Gln Arg
1 5 10 15
Met Gly Thr Ile Leu Leu Cys Pro Asn Met Gln Pro His Gln Asn Leu
20 25 30
Thr Thr Val Ile Cys Ser Lys Gly Asn Leu Leu Arg Ala Val Lys Gly
35 40 45
Ser Lys Ser Leu Arg Asn Ala Arg Lys Tyr Pro Phe His His Pro Pro
50 55 60
Xaa Xaa Glu Pro Pro Asn Gly Gly Gln Thr Arg Xaa Gly Gly Ala Arg
65 70 75 80
Phe Lys Gln Pro Thr
85

<210> 1845
<211> 110
<212> PRT
<213> Homo sapiens

<400> 1845
Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe
1   5   10   15
Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr
            20   25   30
Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys
        35   40   45
Val Leu Thr Leu Leu Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly
    50   55   60
Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe Ala
65   70   75   80
Leu Phe Asn Ser Leu Gln Gly Val Phe Ile Cys Cys Trp Phe Thr Ile
                85   90   95
Leu Tyr Leu Pro Ser Gln Ser Thr Thr Val Ser Ser Ser Thr
            100   105   110

<210> 1846
<211> 94
<212> PRT
<213> Homo sapiens

<400> 1846
Met Thr Glu Pro Pro Gly Ala Ser Ser His Leu Arg Gln Ala Leu Arg
1   5   10   15
Cys Cys Gln Trp Leu Ala Gly Ile Pro Ser Gln Trp Val Leu Phe Trp
            20   25   30
Glu Val Leu Trp Lys Trp Val Leu Gln Thr Asp Ala Ala Trp Ser Pro
        35   40   45
Gly Phe Ser Pro Leu Pro Arg Gly Met Tyr Gln His Pro Ala Leu Pro
    50   55   60
Glu Met Pro Ser Pro Phe Leu Gly Ile Leu Arg Leu Glu Tyr Val Lys
65   70   75   80
Leu Leu Gly Leu Cys Met Cys Leu Ser Thr Gly Ser Ser *
                85   90   93

<210> 1847
<211> 1300
<212> PRT
<213> Homo sapiens

<400> 1847
Met Ala Trp Lys Thr Leu Pro Ile Tyr Leu Leu Leu Leu Leu Ser Val
1   5   10   15
Phe Val Ile Gln Gln Val Ser Ser Gln Asp Leu Ser Ser Cys Ala Gly
            20   25   30
Arg Cys Gly Glu Gly Tyr Ser Arg Asp Ala Thr Cys Asn Cys Asp Tyr
        35   40   45
Asn Cys Gln His Tyr Met Glu Cys Cys Pro Asp Phe Lys Arg Val Cys
    50   55   60
Thr Ala Glu Leu Ser Cys Lys Gly Arg Cys Phe Glu Ser Phe Glu Arg
65   70   75   80
Gly Arg Glu Cys Asp Cys Asp Ala Gln Cys Lys Lys Tyr Asp Lys Cys

85 90 95
Cys Pro Asp Tyr Glu Ser Phe Cys Ala Glu Val His Asn Pro Thr Ser
100 105 110
Pro Pro Ser Ser Lys Lys Ala Pro Pro Pro Ser Gly Ala Ser Gln Thr
115 120 125
Ile Lys Ser Thr Thr Lys Arg Ser Pro Lys Pro Pro Asn Lys Lys Lys
130 135 140
Thr Lys Lys Val Ile Glu Ser Glu Glu Ile Thr Glu Glu His Ser Val
145 150 155 160
Ser Glu Asn Gln Glu Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
165 170 175
Ser Thr Ile Trp Lys Ile Lys Ser Ser Lys Asn Ser Ala Ala Asn Arg
180 185 190
Glu Leu Gln Lys Lys Leu Lys Val Lys Asp Asn Lys Lys Asn Arg Thr
195 200 205
Lys Lys Lys Pro Thr Pro Lys Pro Pro Val Val Asp Glu Ala Gly Ser
210 215 220
Gly Leu Asp Asn Gly Asp Phe Lys Val Thr Thr Pro Asp Thr Ser Thr
225 230 235 240
Thr Gln His Asn Lys Val Ser Thr Ser Pro Lys Ile Thr Thr Ala Lys
245 250 255
Pro Ile Asn Pro Arg Pro Ser Leu Pro Pro Asn Ser Asp Thr Ser Lys
260 265 270
Glu Thr Ser Leu Thr Val Asn Lys Glu Thr Thr Val Glu Thr Lys Glu
275 280 285
Thr Thr Thr Thr Asn Lys Gln Thr Ser Thr Asp Gly Lys Glu Lys Thr
290 295 300
Thr Ser Ala Lys Glu Thr Gln Ser Ile Glu Lys Thr Ser Ala Lys Asp
305 310 315 320
Leu Ala Pro Thr Ser Lys Val Leu Ala Lys Pro Thr Pro Lys Ala Glu
325 330 335
Thr Thr Thr Lys Gly Pro Ala Leu Thr Thr Pro Lys Glu Pro Thr Pro
340 345 350
Thr Thr Pro Lys Glu Pro Ala Ser Thr Thr Pro Lys Glu Pro Thr Pro
355 360 365
Thr Thr Ile Lys Ser Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr
370 375 380
Thr Thr Lys Ser Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr
385 390 395 400
Thr Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr
405 410 415
Thr Lys Glu Pro Ala Pro Thr Thr Thr Lys Ser Ala Pro Thr Thr Pro
420 425 430
Lys Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Thr Thr Pro
435 440 445
Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Thr Pro Thr Thr Pro
450 455 460
Lys Glu Pro Ala Pro Thr Thr Lys Glu Pro Ala Pro Thr Thr Pro Lys
465 470 475 480
Glu Pro Ala Pro Thr Ala Pro Lys Lys Pro Ala Pro Thr Thr Pro Lys
485 490 495
Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys
500 505 510
Glu Pro Ser Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Thr Lys
515 520 525
Ser Ala Pro Thr Thr Thr Lys Glu Pro Ala Pro Thr Thr Thr Lys Ser
530 535 540
Ala Pro Thr Thr Pro Lys Glu Pro Ser Pro Thr Thr Thr Lys Glu Pro
545 550 555 560

Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro
565 570 575
Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro
580 585 590
Ala Pro Thr Thr Thr Lys Lys Pro Ala Pro Thr Ala Pro Lys Glu Pro
595 600 605
Ala Pro Thr Thr Pro Lys Glu Thr Ala Pro Thr Thr Pro Lys Lys Leu
610 615 620
Thr Pro Thr Thr Pro Glu Lys Leu Ala Pro Thr Thr Pro Glu Lys Pro
625 630 635 640
Ala Pro Thr Thr Pro Glu Glu Leu Ala Pro Thr Thr Pro Glu Glu Pro
645 650 655
Thr Pro Thr Thr Pro Glu Glu Pro Ala Pro Thr Thr Pro Lys Ala Ala
660 665 670
Ala Pro Asn Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Pro
675 680 685
Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Glu Thr
690 695 700
Ala Pro Thr Thr Pro Lys Gly Thr Ala Pro Thr Thr Leu Lys Glu Pro
705 710 715 720
Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Lys Glu Leu Ala Pro Thr
725 730 735
Thr Thr Lys Glu Pro Thr Ser Thr Thr Ser Asp Lys Pro Ala Pro Thr
740 745 750
Thr Pro Lys Gly Thr Ala Pro Thr Thr Pro Lys Glu Pro Ala Pro Thr
755 760 765
Thr Pro Lys Glu Pro Ala Pro Thr Thr Pro Lys Gly Thr Ala Pro Thr
770 775 780
Thr Leu Lys Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Lys
785 790 795 800
Glu Leu Ala Pro Thr Thr Thr Lys Gly Pro Thr Ser Thr Thr Ser Asp
805 810 815
Lys Pro Ala Pro Thr Thr Pro Lys Glu Thr Ala Pro Thr Thr Pro Lys
820 825 830
Glu Pro Ala Pro Thr Thr Pro Lys Lys Pro Ala Pro Thr Thr Pro Glu
835 840 845
Thr Pro Pro Pro Thr Thr Ser Glu Val Ser Thr Pro Thr Thr Thr Lys
850 855 860
Glu Pro Thr Thr Ile His Lys Ser Pro Asp Glu Ser Thr Pro Glu Leu
865 870 875 880
Ser Ala Glu Pro Thr Pro Lys Ala Leu Glu Asn Ser Pro Lys Glu Pro
885 890 895
Gly Val Pro Thr Thr Lys Thr Pro Ala Ala Thr Lys Pro Glu Met Thr
900 905 910
Thr Thr Ala Lys Asp Lys Thr Thr Glu Arg Asp Leu Arg Thr Thr Pro
915 920 925
Glu Thr Thr Thr Ala Ala Pro Lys Met Thr Lys Glu Thr Ala Thr Thr
930 935 940
Thr Glu Lys Thr Thr Glu Ser Lys Ile Thr Ala Thr Thr Thr Gln Val
945 950 955 960
Thr Ser Thr Thr Thr Gln Asp Thr Thr Pro Phe Lys Ile Thr Thr Leu
965 970 975
Lys Thr Thr Thr Leu Ala Pro Lys Val Thr Thr Thr Lys Lys Thr Ile
980 985 990
Thr Thr Thr Glu Ile Met Asn Lys Pro Glu Glu Thr Ala Lys Pro Lys
995 1000 1005
Asp Arg Ala Thr Asn Ser Lys Ala Thr Thr Pro Lys Pro Gln Lys Pro
1010 1015 1020
Thr Lys Ala Pro Lys Lys Pro Thr Ser Thr Lys Lys Pro Lys Thr Met

```
1025                1030                1035                1040
Pro Arg Val Arg Lys Pro Lys Thr Thr Pro Thr Pro Arg Lys Met Thr
                1045                1050                1055
Ser Thr Met Pro Glu Leu Asn Pro Thr Ser Arg Ile Ala Glu Ala Met
            1060                1065                1070
Leu Gln Thr Thr Thr Arg Pro Asn Gln Thr Pro Asn Ser Lys Leu Val
        1075                1080                1085
Glu Val Asn Pro Lys Ser Glu Asp Ala Gly Gly Ala Glu Gly Glu Thr
    1090                1095                1100
Pro His Met Leu Leu Arg Pro His Val Phe Met Pro Glu Val Thr Pro
1105                1110                1115                1120
Asp Met Asp Tyr Leu Pro Arg Val Pro Asn Gln Gly Ile Ile Ile Asn
                1125                1130                1135
Pro Met Leu Ser Asp Glu Thr Asn Ile Cys Asn Gly Lys Pro Val Asp
            1140                1145                1150
Gly Leu Thr Thr Leu Arg Asn Gly Thr Leu Val Ala Phe Arg Gly His
        1155                1160                1165
Tyr Phe Trp Met Leu Ser Pro Phe Ser Pro Pro Ser Pro Ala Arg Arg
    1170                1175                1180
Ile Thr Glu Val Trp Gly Ile Pro Ser Pro Ile Asp Thr Val Phe Thr
1185                1190                1195                1200
Arg Cys Asn Cys Glu Gly Lys Thr Phe Phe Phe Lys Asp Ser Gln Tyr
                1205                1210                1215
Trp Arg Phe Thr Asn Asp Ile Lys Asp Ala Gly Tyr Pro Lys Pro Ile
            1220                1225                1230
Phe Lys Gly Phe Gly Gly Leu Thr Gly Gln Ile Val Ala Ala Leu Ser
        1235                1240                1245
Thr Ala Lys Tyr Lys Asn Trp Pro Glu Ser Val Tyr Phe Phe Lys Arg
    1250                1255                1260
Gly Gly Ser Ile Gln Gln Tyr Ile Tyr Lys Gln Glu Pro Val Gln Lys
1265                1270                1275                1280
Cys Pro Gly Arg Arg Pro Ala Leu Asn Tyr Pro Val Tyr Gly Glu Thr
                1285                1290                1295
Asp Thr Gly  *
        1299
```

```
<210> 1848
<211> 103
<212> PRT
<213> Homo sapiens
```

```
<400> 1848
Met Asn Pro Ala Val Arg Gln Arg Cys Leu Leu Phe Cys Phe Gln Gln
  1               5                  10                  15
Lys Leu Ile Leu Ser His Phe Phe Leu Leu Gln Val Pro Gln Trp Cys
             20                  25                  30
Ala Glu Tyr Cys Leu Ser Ile His Tyr Gln His Gly Gly Val Ile Cys
         35                  40                  45
Thr Gln Val His Lys Gln Thr Val Val Gln Leu Ala Leu Arg Val Ala
     50                  55                  60
Asp Glu Met Asp Val Asn Ile Gly His Glu Val Gly Tyr Val Ile Pro
 65                  70                  75                  80
Phe Glu Asn Cys Cys Thr Asn Glu Thr Ile Leu Arg Leu Val Cys Gly
                 85                  90                  95
Val Gln Ser Ala Pro Cys  *
            100     102
```

<210> 1849
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1849
Met Ser Arg Phe Leu Leu Pro Arg Glu Gly Cys Leu Leu Ile Val Phe
1 5 10 15
Met Leu Cys Glu Lys Thr Leu Pro Phe Leu Phe Thr Leu Lys Glu Tyr
20 25 30
Thr Phe Ile Pro Glu His Arg Thr Thr Asp Ile Asn Cys Val Asn Thr
35 40 45
His Glu
50

<210> 1850
<211> 84
<212> PRT
<213> Homo sapiens

<400> 1850
Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His
1 5 10 15
Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile
20 25 30
Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln
35 40 45
Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro
50 55 60
Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln
65 70 75 80
Thr Phe Leu Ser
84

<210> 1851
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1851
Met Ala Ala Cys Lys Leu Leu Lys His Leu Asn Gly Phe Ser Leu Leu
1 5 10 15
Leu Pro Arg Leu Glu Cys Asn Gly Val Ile Ser Val His Cys Asn Pro
20 25 30
Leu Pro Pro Gly Phe Lys Arg Phe Ser Cys Pro Ser Leu Leu Ser Ser
35 40 45
Trp Asp *
50

<210> 1852
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1852
```
Met Lys Thr Lys Cys Lys Pro Asn Ile Thr Phe Phe Asn Thr Ile Ile
 1               5                  10                  15
Cys Phe Phe Leu Thr Phe Leu Phe Cys Ile Tyr Ile Asp Ser Leu Leu
            20                  25                  30
Cys Thr Val Pro Lys Asn Pro Ala Gln Ala Val Gln Leu Asn Arg Asp
        35                  40                  45
His Thr Lys Val His  *
    50          53
```

<210> 1853
<211> 129
<212> PRT
<213> Homo sapiens

<400> 1853
```
Met Ala Val Val Arg Val Met Val Val Val Arg Val Thr Ala Val Val
 1               5                  10                  15
Arg Val Met Val Val Val Arg Val Val Val Val Arg Val Met Val Val
            20                  25                  30
Val Arg Ile Thr Ala Val Leu Arg Val Met Val Val Val Arg Ile Met
        35                  40                  45
Ala Val Ile Arg Val Met Val Val Val Arg Val Thr Ala Ile Val Gly
    50                  55                  60
Val Met Val Val Ile Arg Val Thr Ala Ile Val Ser Ile Met Val Val
65                  70                  75                  80
Val Arg Val Met Val Val Val Arg Val Met Val Val Ala Arg Pro Met
                85                  90                  95
Val Val Val Arg Val Met Ala Val Val Arg Val Met Ala Asp Ser Ala
            100                 105                 110
Leu Arg Ala Ile Cys Ser Ser Ser Leu Asn Val Thr Phe Ser Leu Glu
        115                 120                 125             128
 *
```

<210> 1854
<211> 190
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(190)
<223> Xaa = any amino acid or nothing

<400> 1854

Met Ser Cys Phe Gly Leu Leu Leu Gly Gly Leu Thr Pro Arg Val Leu
1 5 10 15
Ser Thr Glu Glu Gln Leu Pro Pro Gly Phe Pro Ser Ile Asp Met Gly
20 25 30
Pro Gln Leu Lys Val Val Glu Lys Ala Arg Thr Ala Thr Met Leu Cys
35 40 45
Ala Ala Gly Gly Asn Pro Asp Pro Glu Ile Ser Trp Phe Lys Asp Phe
50 55 60
Leu Pro Val Asp Pro Ala Thr Ser Asn Gly Arg Ile Lys Gln Leu Arg
65 70 75 80
Ser Gly Glu Gln Arg Ala Gly Val Lys Gly Pro Cys Arg Pro Gln Asn
85 90 95
Lys Arg Leu Val Arg Ser Gln His Ser Leu Leu Pro Trp Ala Trp Ala
100 105 110
Pro Pro Gly Leu Ser Gly Gly Tyr Leu Val Gly Trp Ala Gly Ser Tyr
115 120 125
Cys Arg Cys Ala Trp Leu Arg Glu Glu Ser Ser Trp Leu Ala Val Pro
130 135 140
Leu Pro Ser Ser Asp Cys Gln Thr Pro Asp Phe Gly Pro Val Leu Pro
145 150 155 160
Leu Pro Ala His Val Met Cys Gln Cys Gly Gly Leu Phe Lys Gly Ala
165 170 175
Leu Trp Met Leu Thr Leu Leu Leu Pro Cys Xaa Leu Ala *
180 185 189

<210> 1855
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1855
Met Val Val Ser Ala Trp Ile Gly Leu Glu Ala Thr Val Val Ala Ala
1 5 10 15
Cys Leu Ala Leu Leu Gly Ser Val Val Arg Glu Thr Ser Thr Ser Ala
20 25 30
Ser Pro Thr Pro Ala Ala Leu Arg Ala Ala Trp Thr Val Tyr Ser Ser
35 40 45
Pro Met Thr Thr Cys Val Phe Ala Val Val Pro Leu Leu Ala Gly Thr
50 55 60
Val Lys Pro Ser Ser Met Cys Val Pro Arg Cys Pro Ala *
65 70 75 77

<210> 1856
<211> 67
<212> PRT
<213> Homo sapiens

<400> 1856
Met Thr Asn Trp Met Leu Leu Leu Ala Ser Arg Ile Phe Gln Ser Leu
1 5 10 15
Ala Ile Pro Lys Gln Leu Gly Leu Arg Arg Glu Met Pro Ser Gly Ser
20 25 30
Pro Thr Thr Asn Ser Ser Ser Gly Cys Ile Arg Asn Leu Glu Tyr Ser

```
        35                  40                  45
Thr Leu Met Gly Ser Glu Met Pro Met Ala Leu Ala Ala Glu Thr Trp
    50                  55                  60
Leu Leu  *
 65  66
```

<210> 1857
<211> 107
<212> PRT
<213> Homo sapiens

<400> 1857
```
Met Leu Leu Met Phe Leu Leu Ala Thr Cys Leu Leu Ala Ile Ile Phe
  1               5                  10                  15
Val Pro Gln Glu Met Gln Thr Leu Arg Val Val Leu Ala Thr Leu Gly
             20                  25                  30
Val Gly Ala Ala Ser Leu Gly Ile Thr Cys Ser Thr Ala Gln Glu Asn
         35                  40                  45
Glu Leu Ile Pro Ser Ile Ile Arg Gly Arg Ala Thr Gly Ile Thr Gly
    50                  55                  60
Asn Phe Ala Asn Ile Gly Gly Ala Leu Ala Ser Leu Val Met Ile Leu
 65                  70                  75                  80
Ser Ile Tyr Ser Arg Pro Leu Pro Trp Ile Ile Tyr Gly Val Phe Ala
                 85                  90                  95
Ile Leu Ser Gly Leu Val Val Leu Leu Leu Pro
            100                 105     107
```

<210> 1858
<211> 134
<212> PRT
<213> Homo sapiens

<400> 1858
```
Met Ile Pro Pro Ala Ile Phe Trp Val Leu Ile Ile Phe Gly Trp Thr
  1               5                  10                  15
Leu Val Tyr Gly Phe Val Tyr Phe Thr Thr Gly Glu Thr Ile Met Asp
             20                  25                  30
Lys Leu Leu Arg Val Leu Tyr Trp Ile Leu Val Lys Thr Phe Phe Arg
         35                  40                  45
Glu Ile Ser Val Ser His Gln Glu Arg Ile Pro Lys Asp Lys Pro Val
    50                  55                  60
Met Leu Val Cys Ala Pro His Ala Asn Gln Phe Val Asp Gly Met Val
 65                  70                  75                  80
Ile Ser Thr His Leu Asp Arg Lys Val Tyr Phe Val Gly Ala Ala Ser
                 85                  90                  95
Ser Phe Arg Lys Tyr Lys Val Val Gly Leu Phe Met Lys Leu Met Ala
            100                 105                 110
Ser Ile Ile Ser Gly Glu Arg His Gln Asp Val Lys Lys Val Leu Thr
        115                 120                 125
Gly Met Ala Thr Glu Lys
    130             134
```

<210> 1859
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1859
Met Phe Tyr Val Lys Ala Glu Phe Leu Val Ser Phe Ser Cys Pro Trp
1 5 10 15
Leu Thr Ala Cys Ala Leu Leu Met Ser Cys Ser Trp Phe Leu Thr Leu
20 25 30
Thr Ile Leu Ser Val Lys Gly Gly Thr Pro Ala Gly Met Leu Asp Gln
35 40 45
Lys Lys Gly Lys Phe Ala Trp Phe Ser His Ser Thr Glu Thr His Gly
50 55 60
Asn Val Pro Leu Cys Ser Val Cys Val Asn Ala Cys Gly Cys Ile Pro
65 70 75 80
Asp *
81

<210> 1860
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1860
Met Pro Leu Ser Pro Leu Leu Phe His Leu Gly Pro Phe Pro Phe Lys
1 5 10 15
Ala Glu Ser Trp Leu Asn Phe Leu Pro Pro Pro Phe Phe Pro Leu Leu
20 25 30
Pro Leu Leu Phe Leu Ala Lys Ala Glu Ile Gln Trp Ala *
35 40 45

<210> 1861
<211> 128
<212> PRT
<213> Homo sapiens

<400> 1861
Met Thr Ile Phe Phe Ser Leu Leu Val Leu Ala Ile Cys Ile Ile Leu
1 5 10 15
Val His Leu Leu Ile Arg Tyr Arg Leu His Phe Leu Pro Glu Ser Val
20 25 30
Ala Val Val Ser Leu Gly Ile Leu Met Gly Ala Val Ile Lys Ile Ile
35 40 45
Glu Phe Lys Lys Leu Ala Asn Trp Lys Glu Glu Glu Met Phe Arg Pro
50 55 60
Asn Met Phe Phe Leu Leu Leu Leu Pro Pro Ile Ile Phe Glu Ser Gly
65 70 75 80
Tyr Ser Leu His Lys Gly Asn Phe Phe Gln Asn Ile Gly Ser Ile Thr
85 90 95
Leu Phe Ala Val Phe Gly Thr Ala Ile Ser Ala Phe Val Val Gly Gly

```
            100                 105                 110
Gly Ile Tyr Phe Leu Gly Gln Ala His Val Ile Ser Lys Leu Asn Met
        115                 120                 125         128




     <210> 1862
     <211> 58
     <212> PRT
     <213> Homo sapiens


     <400> 1862
Met Trp Asp Met Leu Pro Trp Gly Ile Thr Trp Val Leu Leu Thr Thr
  1               5                  10                  15
Gln Leu His Ser Pro Leu Leu Tyr Val Ile Gly Phe Thr Tyr Trp Val
             20                  25                  30
Cys Lys Gly Asp Arg Asp Ser Tyr Leu Glu Glu Asn Ser Arg Glu Thr
         35                  40                  45
Ala Ser Val Tyr Thr Ser Val Leu Ser  *
     50                  55      57



     <210> 1863
     <211> 50
     <212> PRT
     <213> Homo sapiens


     <400> 1863
Met Thr Gln Asp Leu Val Leu Thr Val Pro Phe Met Gly Cys Leu Leu
  1               5                  10                  15
Ile Leu Val Asp Gly Leu Lys Pro Asn Arg Pro Ala Tyr Ile Gln Thr
             20                  25                  30
Gly Ser Gln Ala Thr Gln Ala Gly Val Gln Trp His Asn Tyr Gly Ser
         35                  40                  45
Leu  *
 49



     <210> 1864
     <211> 90
     <212> PRT
     <213> Homo sapiens


     <400> 1864
Met Val Ala Ser Ala Ala Gln Leu Leu Ser His Val Cys Leu Gly Gly
  1               5                  10                  15
Leu Gln Leu Leu His Ser Phe Leu Ser Ser Leu Gln Leu Pro Ala Leu
             20                  25                  30
Leu Leu Lys Leu Ala Pro Glu Ala Leu Ala Leu Phe Thr Ser Ile Leu
         35                  40                  45
Lys Ser Ala Leu Val Val His Asp Phe Ser Thr Gln Leu Glu Leu Glu
     50                  55                  60
```

```
Gly Val Glu Leu Leu Val Cys Ser Pro Leu Glu Ala Leu Gly Pro Leu
 65                 70                  75                  80
Leu Cys Leu Gly Glu Leu Gly Leu Gln Ala
                85                  90
```

<210> 1865
<211> 125
<212> PRT
<213> Homo sapiens

<400> 1865

```
Met Arg Leu Gly Leu Leu Leu Leu Ala Arg His Trp Cys Ile Ala Gly
  1               5                  10                  15
Val Phe Pro Gln Lys Phe Asp Gly Asp Ser Ala Tyr Val Gly Met Ser
             20                  25                  30
Asp Gly Asn Pro Glu Leu Leu Ser Thr Ser Gln Thr Tyr Asn Gly Gln
         35                  40                  45
Ser Glu Asn Asn Glu Asp Tyr Glu Ile Pro Pro Ile Thr Pro Pro Asn
     50                  55                  60
Leu Pro Glu Pro Ser Leu Leu His Leu Gly Asp His Glu Ala Ser Tyr
 65                  70                  75                  80
His Ser Leu Cys His Gly Leu Thr Pro Asn Gly Leu Leu Pro Ala Tyr
                 85                  90                  95
Ser Tyr Gln Ala Met Asp Leu Pro Ala Ile Met Val Ser Asn Met Leu
            100                 105                 110
Ala Gln Asp Ser His Leu Leu Ser Gly Gln Leu Pro Thr
        115                 120                 125
```

<210> 1866
<211> 129
<212> PRT
<213> Homo sapiens

<400> 1866

```
Met Cys Phe Leu Asn Lys Leu Leu Leu Leu Ala Ala Leu Asp Trp Leu
  1               5                  10                  15
Phe Gln Ile Pro Thr Val Pro Glu Asp Leu Phe Phe Leu Glu Glu Gly
             20                  25                  30
Pro Ser Tyr Ala Phe Glu Val Asp Thr Val Ala Pro Glu His Gly Leu
         35                  40                  45
Asp Asn Ala Pro Val Val Asp Gln Gln Leu Leu Tyr Thr Cys Cys Pro
     50                  55                  60
Tyr Ile Gly Glu Leu Arg Lys Leu Leu Ala Ser Trp Val Ser Gly Ser
 65                  70                  75                  80
Ser Gly Arg Ser Gly Gly Phe Met Arg Lys Ile Thr Pro Thr Thr Thr
                 85                  90                  95
Thr Ser Leu Gly Ala Gln Pro Ser Gln Thr Ser Gln Gly Leu Gln Ala
            100                 105                 110
Gln Leu Ala Gln Ala Phe Phe His Asn Gln Pro Pro Ser Leu Arg Arg
        115                 120                 125
Thr
129
```

<210> 1867
<211> 80
<212> PRT
<213> Homo sapiens

<400> 1867
Met Met Arg Leu Glu Lys Phe Val Thr Trp Ser Val Met Ala Leu Gly
1 5 10 15
Trp Phe Val Phe Arg Gln Gln Asn Cys Trp Ala Leu Trp Ser Lys Ser
20 25 30
Val Leu Ile Ser Trp Ser Arg Pro Leu Thr Arg Ser Met Ser Asp Leu
35 40 45
Arg Arg Lys Arg Thr Ala His Glu Arg Ala Lys Glu Leu Tyr Ser Ser
50 55 60
Gly Glu Phe Ser Ser Gly Arg Lys Trp Gly Asp Asp Ala Pro Lys Glu
65 70 75 80

<210> 1868
<211> 113
<212> PRT
<213> Homo sapiens

<400> 1868
Met Leu Val Trp Leu Tyr Gly Thr Ile Arg Trp Pro Ala Leu Gly Ala
1 5 10 15
Pro Arg Trp Trp Pro Trp Val Trp Pro Pro Gly Val Trp Ser Gly Ile
20 25 30
Glu Thr Pro Ser Ser Thr Pro Arg Ala Arg Ser Leu Arg Gly Thr Gly
35 40 45
Gly Ala Val Thr Arg Arg Thr Gly Ser Ser Phe Pro Trp Thr Thr Thr
50 55 60
Thr Arg Pro Ser Ser Trp Trp Thr Thr Ala His Thr Ala Ala Trp Gly
65 70 75 80
Ala Arg Thr Ala Ser Ala Cys Ala Trp Ser Pro Thr Ser His Ser Lys
85 90 95
Thr Arg Pro Trp Gln Gly Leu Glu Leu Thr Ser Leu Ala Cys Ser Ser
100 105 110 112
*

<210> 1869
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1869
Met Phe Leu Trp Val Lys Arg Leu Leu Phe Ala Ala Ser Leu Leu Ala
1 5 10 15

Ser Asp Ser Ser Thr Ile Leu Cys Ser Arg Asp Leu Ile Leu Glu Ser
20 25 30
Ile Ala Leu Ile Ile Ala Phe Cys Ser Leu Arg Ile Leu Pro Phe Ser
35 40 45
Trp Ala Ser Ser Ser Cys Leu Cys Ile Met Phe Ser Ser Val Ser Leu
50 55 60
Ser Ala Arg Ser Phe Phe Ile *
65 70 71

<210> 1870
<211> 197
<212> PRT
<213> Homo sapiens

<400> 1870
Met Arg Thr Leu Leu Thr Ile Leu Thr Val Gly Ser Leu Ala Ala His
1 5 10 15
Ala Pro Glu Asp Pro Ser Asp Leu Leu Gln His Val Lys Phe Gln Ser
20 25 30
Ser Asn Phe Glu Asn Ile Leu Thr Trp Asp Ser Gly Pro Glu Gly Thr
35 40 45
Pro Asp Thr Val Tyr Ser Ile Glu Tyr Lys Thr Tyr Gly Glu Arg Asp
50 55 60
Trp Val Ala Lys Lys Gly Cys Gln Arg Ile Thr Arg Lys Ser Cys Asn
65 70 75 80
Leu Thr Val Glu Thr Gly Asn Leu Thr Glu Leu Tyr Tyr Ala Arg Val
85 90 95
Thr Ala Val Ser Ala Gly Gly Arg Ser Ala Thr Lys Met Thr Asp Arg
100 105 110
Phe Ser Ser Leu Gln His Thr Thr Leu Lys Pro Pro Asp Val Thr Cys
115 120 125
Ile Ser Lys Val Arg Ser Ile Gln Met Ile Val His Pro Thr Pro Thr
130 135 140
Pro Ile Arg Ala Gly Asp Gly His Arg Leu Thr Leu Glu Asp Ile Phe
145 150 155 160
His Asp Leu Phe Tyr His Leu Glu Leu Gln Val Asn Arg Thr Tyr Gln
165 170 175
Met Val Ser Val Cys Cys Thr Leu Val Phe Leu Cys Leu Gly Ser Leu
180 185 190
Phe Pro Pro Asn *
195 196

<210> 1871
<211> 75
<212> PRT
<213> Homo sapiens

<400> 1871
Met Glu Tyr Arg Leu Gln Lys Gly Ala Gly Phe His Leu Asp Leu Phe
1 5 10 15
Cys Val Ala Val Leu Met Leu Leu Thr Ser Ala Leu Gly Leu Pro Trp
20 25 30
Tyr Val Ser Ala Thr Val Ile Ser Leu Ala His Met Asp Ser Leu Arg

```
        35                  40                  45
Arg Glu Ser Arg Ala Cys Ala Pro Gly Glu Arg Pro Asn Phe Leu Gly
    50                  55                  60
Ile Arg Glu Gln Arg Leu Thr Gly Leu Val Val
65                  70                  75
```

<210> 1872
<211> 84
<212> PRT
<213> Homo sapiens

<400> 1872

```
Met Pro Phe Ser Thr Cys Thr Ala Leu Pro Ser Trp Ala Thr Leu Ser
 1               5                  10                  15
Thr Trp Ser Trp Thr Pro Lys Val Ser Leu Ala Gly Glu Glu Arg Gly
            20                  25                  30
Glu Thr Cys Gln Pro Asp Pro Phe Pro Pro His Pro Ser Cys Ser Val
        35                  40                  45
Gly Arg Thr Pro Pro His Ser Ser Leu Gly Ser Pro Pro Thr Thr Leu
    50                  55                  60
Phe Leu Ser Pro Leu Leu Arg Val Glu Ser Arg Gly Ala Lys Cys Val
65                  70                  75                  80
Val Cys Cys  *
        83
```

<210> 1873
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1873

```
Met Cys Gly Ser Pro Glu Arg Leu Cys Val Arg Cys Ala Arg Val Cys
 1               5                  10                  15
Ala Val Phe Met Arg Ala Leu Cys Val Val Cys Val Tyr Leu Arg Arg
            20                  25                  30
Arg Ile Lys Tyr Glu Arg Phe Leu Gly Trp Glu Leu Arg Cys Lys Ile
        35                  40                  45
Trp Gly  *
    50
```

<210> 1874
<211> 503
<212> PRT
<213> Homo sapiens

<400> 1874

```
Met Ser Leu Val Leu Leu Ser Leu Ala Ala Leu Cys Arg Ser Ala Val
 1               5                  10                  15
Pro Arg Glu Pro Thr Val Gln Cys Gly Ser Glu Thr Gly Pro Ser Pro
            20                  25                  30
```

Glu Trp Met Leu Gln His Asp Leu Ile Pro Gly Asp Leu Arg Asp Leu
35 40 45
Arg Val Glu Pro Val Thr Thr Ser Val Ala Thr Gly Asp Tyr Ser Ile
50 55 60
Leu Met Asn Val Ser Trp Val Leu Arg Ala Asp Ala Ser Ile Arg Leu
65 70 75 80
Leu Lys Ala Thr Lys Ile Cys Val Thr Gly Lys Ser Asn Phe Gln Ser
85 90 95
Tyr Ser Cys Val Arg Cys Asn Tyr Thr Glu Ala Phe Gln Thr Gln Thr
100 105 110
Arg Pro Ser Gly Gly Lys Trp Thr Phe Ser Tyr Ile Gly Phe Pro Val
115 120 125
Glu Leu Asn Thr Val Tyr Phe Ile Gly Ala His Asn Ile Pro Asn Ala
130 135 140
Asn Met Asn Glu Asp Gly Pro Ser Met Ser Val Asn Phe Thr Ser Pro
145 150 155 160
Gly Cys Leu Asp His Ile Met Lys Tyr Lys Lys Lys Cys Val Lys Ala
165 170 175
Gly Ser Leu Trp Asp Pro Asn Ile Thr Ala Cys Lys Lys Asn Glu Glu
180 185 190
Thr Val Glu Val Asn Phe Thr Thr Thr Pro Leu Gly Asn Arg Tyr Met
195 200 205
Ala Leu Ile Gln His Ser Thr Ile Ile Gly Phe Ser Gln Val Phe Glu
210 215 220
Pro His Gln Lys Lys Gln Thr Arg Ala Ser Val Val Ile Pro Val Thr
225 230 235 240
Gly Asp Ser Glu Gly Ala Thr Val Gln Leu Thr Pro Tyr Phe Pro Thr
245 250 255
Cys Gly Ser Asp Cys Ile Arg His Lys Gly Thr Val Val Leu Cys Pro
260 265 270
Gln Thr Gly Val Pro Phe Pro Leu Asp Asn Asn Lys Ser Lys Pro Gly
275 280 285
Gly Trp Leu Pro Leu Leu Leu Leu Ser Leu Leu Val Ala Thr Trp Val
290 295 300
Leu Val Ala Gly Ile Tyr Leu Met Trp Arg His Glu Arg Ile Lys Lys
305 310 315 320
Thr Ser Phe Ser Thr Thr Thr Leu Leu Pro Pro Ile Lys Val Leu Val
325 330 335
Val Tyr Pro Ser Glu Ile Cys Phe His His Thr Ile Cys Tyr Phe Thr
340 345 350
Glu Phe Leu Gln Asn His Cys Arg Ser Glu Val Ile Leu Glu Lys Trp
355 360 365
Gln Lys Lys Lys Ile Ala Glu Met Gly Pro Val Gln Trp Leu Ala Thr
370 375 380
Gln Lys Lys Ala Ala Asp Lys Val Val Phe Leu Leu Ser Asn Asp Val
385 390 395 400
Asn Ser Val Cys Asp Gly Thr Cys Gly Lys Ser Glu Gly Ser Pro Ser
405 410 415
Glu Asn Ser Gln Asp Leu Phe Pro Leu Ala Phe Asn Leu Phe Cys Ser
420 425 430
Asp Leu Arg Ser Gln Ile His Leu His Lys Tyr Val Val Val Tyr Phe
435 440 445
Arg Glu Ile Asp Thr Lys Asp Asp Tyr Asn Ala Leu Ser Val Cys Pro
450 455 460
Lys Tyr His Leu Met Lys Asp Ala Thr Ala Phe Cys Ala Glu Leu Leu
465 470 475 480
His Val Lys Gln Gln Val Ser Ala Gly Lys Arg Ser Gln Ala Cys His
485 490 495
Asp Gly Cys Cys Ser Leu *

500 502

<210> 1875
<211> 158
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(158)
<223> Xaa = any amino acid or nothing

<400> 1875
Met Xaa Pro Pro Thr Arg Pro Arg Thr Arg Gly Val Gly Ile Phe Tyr
1 5 10 15
Phe Val Ile Tyr Ile Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr
20 25 30
Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Thr
35 40 45
Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu
50 55 60
Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu Phe Ser Lys Leu Ser
65 70 75 80
Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn
85 90 95
Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg
100 105 110
Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly
115 120 125
Glu Ser Gly Glu Met Asp Ser Leu Arg Ser Gln Met Glu Glu Arg Phe
130 135 140
Met Ser Ala Asn Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr
145 150 155 158

<210> 1876
<211> 106
<212> PRT
<213> Homo sapiens

<400> 1876
Met Gly Asn Arg Ala Val Ile Ile Ala Arg Gln Leu Ser Ser Val His
1 5 10 15
Thr Leu Ile Cys Asn Phe Phe Trp Leu Leu Leu Arg Thr Thr Gly Gly
20 25 30
Asp Leu Asp Ser Leu Lys Cys Ser Tyr Glu Ser Ile Gly Leu Asn Ser
35 40 45
Ile Ser Thr His Glu Phe Ile Cys Thr Trp Gln Arg Arg Leu Asn Phe
50 55 60
Ser Phe Val Met Ser Phe Lys Pro Leu Phe Arg Ala Ser Pro His Ser
65 70 75 80
Tyr Leu Leu Ile Ile Gly Ser Gln Leu His Glu Thr Phe Asn Leu Gly
85 90 95
Ser Ile Ser Ser Glu Glu Lys Cys Ser *
100 105

<210> 1877
<211> 241
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(241)
<223> Xaa = any amino acid or nothing

<400> 1877
Met Leu Trp Ala Leu Trp Pro Arg Trp Leu Ala Asp Lys Met Leu Pro
1 5 10 15
Leu Leu Gly Ala Val Leu Leu Gln Lys Arg Glu Lys Arg Gly Pro Leu
20 25 30
Trp Arg His Trp Arg Arg Glu Thr Tyr Pro Tyr Tyr Asp Leu Gln Val
35 40 45
Lys Val Leu Arg Ala Thr Asn Ile Arg Gly Thr Asp Leu Leu Ser Lys
50 55 60
Ala Asp Cys Tyr Val Gln Leu Trp Leu Pro Thr Ala Ser Pro Ser Pro
65 70 75 80
Ala Gln Thr Arg Ile Val Ala Asn Cys Ser Asp Pro Glu Trp Asn Glu
85 90 95
Thr Phe His Tyr Gln Ile His Gly Ala Val Lys Asn Val Leu Glu Leu
100 105 110
Thr Leu Tyr Asp Lys Asp Ile Leu Gly Ser Asp Gln Leu Ser Leu Leu
115 120 125
Leu Phe Asp Leu Arg Ser Leu Lys Cys Gly Gln Pro His Lys His Thr
130 135 140
Phe Pro Leu Asn His Gln Asp Ser Gln Glu Leu Gln Val Glu Phe Val
145 150 155 160
Leu Glu Lys Ser Gln Glu Pro Ala Ser Glu Val Ile Thr Asn Gly Val
165 170 175
Leu Gly Ala His Pro Trp Leu Arg Met Lys Gly Met Ile Leu Gly Glu
180 185 190
Gly Arg Ala Pro Arg Gln Gln His Gly Gln Ser Trp Glu Gly Gly Val
195 200 205
Gly Pro Ser Pro Leu Ser Xaa Xaa Xaa Asn Thr Gly Gly Lys Ile Val
210 215 220
Gly Phe Trp Glu Glu Met Ala Asn Gly Thr Gly Ala Pro Pro Arg Pro
225 230 235 240
Pro
241

<210> 1878
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1878
Met Leu Leu Met Leu Leu Phe Arg Cys Cys Ser Ser Lys Asp Leu Trp
1 5 10 15
Pro Val Leu Ile Ala His Leu Val Pro Gln Gly Gly Gln Glu Gly Asn

```
             20                  25                  30
Val Gly Glu Gln Thr Lys Gly Lys Ser Asn Arg Val Leu Pro Val Phe
         35                  40                  45
Leu  *
 49
```

<210> 1879
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1879

```
Met Cys Ser Ala Phe Ser Ser Phe Trp Trp Val Pro Pro Leu Ala Gly
  1               5                  10                  15
Ser Gly Val Lys Leu Gln Thr Phe Thr Ala Ser Val Thr Ala His Lys
             20                  25                  30
Arg Ser Thr Asp Pro Lys Ser Glu Gln Gln Leu Asp Leu Ser Gln Arg
         35                  40                  45
Thr Lys Glu Gln Ser Leu Thr Lys
     50                  55  56
```

<210> 1880
<211> 161
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(161)
<223> Xaa = any amino acid or nothing

<400> 1880

```
Met Pro Ser Ala Ser Leu Leu Val Asn Leu Leu Ser Ala Leu Leu Ile
  1               5                  10                  15
Leu Phe Val Phe Gly Glu Thr Glu Ile Arg Phe Thr Gly Gln Thr Glu
             20                  25                  30
Phe Val Val Asn Glu Thr Ser Thr Thr Val Ile Arg Leu Ile Ile Glu
         35                  40                  45
Arg Ile Gly Glu Pro Ala Asn Val Thr Ala Ile Val Ser Leu Tyr Gly
     50                  55                  60
Glu Asp Ala Gly Asp Phe Phe Asp Thr Tyr Ala Ala Ala Phe Ile Pro
 65                  70                  75                  80
Ala Gly Glu Thr Asn Arg Thr Val Tyr Ile Ala Val Cys Asp Asp Asp
                 85                  90                  95
Leu Pro Glu Pro Asp Glu Thr Phe Ile Phe His Leu Thr Leu Gln Lys
            100                 105                 110
Pro Ser Ala Asn Val Lys Leu Gly Trp Pro Arg Thr Val Thr Val Thr
        115                 120                 125
Ile Leu Ser Asn Gly Gln Met Ala Phe Trp Glu Phe Ile Phe Ile Leu
    130                 135                 140
Asn Ile Gly Leu Pro Pro Pro Ile Pro Pro Ser Gly Xaa Leu Lys Ala
145                 150                 155                 160
Pro
161
```

<210> 1881
<211> 130
<212> PRT
<213> Homo sapiens

<400> 1881
Met Gly Ile Tyr Gln Met Tyr Leu Cys Phe Leu Leu Ala Val Leu Leu
1 5 10 15
Gln Leu Tyr Val Ala Thr Glu Ala Ile Leu Ile Ala Leu Val Gly Ala
20 25 30
Thr Pro Ser Tyr His Trp Asp Leu Ala Glu Leu Leu Pro Asn Gln Ser
35 40 45
His Gly Asn Gln Ser Ala Gly Glu Asp Gln Ala Phe Gly Asp Trp Leu
50 55 60
Leu Thr Ala Asn Gly Ser Glu Ile His Lys His Val His Phe Ser Ser
65 70 75 80
Ser Phe Thr Ser Ile Ala Ser Glu Trp Phe Leu Ile Ala Asn Arg Ser
85 90 95
Tyr Lys Val Ser Ala Ala Ser Ser Phe Phe Phe Ser Gly Val Phe Val
100 105 110
Gly Val Ile Ser Phe Gly Gln Leu Ser Asp Arg Phe Gly Arg Lys Lys
115 120 125
Val Tyr
130

<210> 1882
<211> 108
<212> PRT
<213> Homo sapiens

<400> 1882
Met Leu Trp Phe Ser Gly Val Gly Ala Leu Ala Glu Arg Tyr Cys Arg
1 5 10 15
Arg Ser Pro Gly Ile Thr Cys Cys Val Leu Leu Leu Leu Asn Cys Ser
20 25 30
Gly Val Pro Met Ser Leu Ala Ser Ser Phe Leu Thr Gly Ser Val Ala
35 40 45
Lys Cys Glu Asn Glu Gly Glu Val Leu Gln Ile Pro Phe Ile Thr Asp
50 55 60
Asn Pro Cys Ile Met Cys Val Cys Leu Asn Lys Glu Val Thr Cys Lys
65 70 75 80
Arg Glu Lys Cys Pro Val Leu Ser Arg Asp Cys Ala Leu Ala Ile Lys
85 90 95
Gln Arg Gly Ala Cys Cys Glu Gln Cys Lys Gly Cys
100 105 108

<210> 1883
<211> 88
<212> PRT
<213> Homo sapiens

<400> 1883
Met Leu Phe Tyr Leu Val Ser Val Cys Leu Cys Val Ala Val Ile Val
1 5 10 15
Ala Phe Gln Leu Thr Ala Phe Thr Phe Arg Lys Asn Leu Ala Ala Thr
20 25 30
Ala Leu Leu Leu Ser Leu Phe Gly Tyr Ala Thr Leu Pro Trp Met Tyr
35 40 45
Leu Met Ser Arg Ile Phe Ser Ser Ser Asp Val Ala Phe Ile Ser Tyr
50 55 60
Val Ser Leu Asn Phe Ile Phe Gly Leu Cys Thr Met Leu Ile Thr Ile
65 70 75 80
Met Pro Arg Leu Leu Ala Ile Ile
85 88

<210> 1884
<211> 116
<212> PRT
<213> Homo sapiens

<400> 1884
Met Cys Trp Ala Arg Cys Trp Thr Arg Trp Asn Thr Cys Thr Ile Trp
1 5 10 15
Thr Ser Ser Thr Asp Pro Phe Arg Lys Cys Trp Met Ala Pro Glu Ala
20 25 30
Leu Asn Phe Ser Phe Ser His Lys Ser Asp Ile Trp Ser Leu Gly Cys
35 40 45
Ile Ile Leu Asp Met Thr Ser Cys Ser Phe Met Asp Gly Thr Glu Ala
50 55 60
Met His Leu Arg Lys Ser Leu Arg Gln Ser Pro Gly Ser Leu Lys Ala
65 70 75 80
Val Leu Lys Thr Met Glu Glu Lys Gln Ile Pro Asp Val Glu Thr Phe
85 90 95
Arg Asn Leu Leu Pro Leu Met Leu Gln Ile Asp Pro Ser Asp Arg Ile
100 105 110
Thr Ile Lys *
115

<210> 1885
<211> 115
<212> PRT
<213> Homo sapiens

<400> 1885
Met Ser Glu Arg Val Glu Arg Asn Trp Ser Thr Gly Gly Trp Leu Leu
1 5 10 15
Ala Leu Cys Leu Ala Trp Leu Trp Thr His Leu Thr Leu Ala Ala Leu
20 25 30
Gln Pro Pro Thr Ala Thr Val Leu Val Gln Gln Gly Thr Cys Glu Val
35 40 45
Ile Ala Ala His Arg Cys Cys Asn Arg Asn Arg Ile Glu Glu Arg Ser
50 55 60

Gln Thr Val Lys Cys Ser Cys Phe Ser Gly Gln Val Ala Gly Thr Thr
65 70 75 80
Arg Ala Lys Pro Ser Cys Val Asp Asp Leu Leu Leu Ala Ala His Cys
85 90 95
Ala Arg Arg Asp Pro Arg Ala Ala Leu Arg Leu Leu Leu Pro Gln Pro
100 105 110
Pro Ser Ser
115

<210> 1886
<211> 357
<212> PRT
<213> Homo sapiens

<400> 1886
Met Ile Leu Ser Leu Leu Phe Ser Leu Gly Gly Pro Leu Gly Trp Gly
1 5 10 15
Leu Leu Gly Ala Trp Ala Gln Ala Ser Ser Thr Ser Leu Ser Asp Leu
20 25 30
Gln Ser Ser Arg Thr Pro Gly Val Trp Lys Ala Glu Ala Glu Asp Thr
35 40 45
Gly Lys Asp Pro Val Gly Arg Asn Trp Cys Pro Tyr Pro Met Ser Lys
50 55 60
Leu Val Thr Leu Leu Ala Leu Cys Lys Thr Glu Lys Phe Leu Ile His
65 70 75 80
Ser Gln Gln Pro Cys Pro Gln Gly Ala Pro Asp Cys Gln Lys Val Lys
85 90 95
Val Met Tyr Arg Met Ala His Lys Pro Val Tyr Gln Val Lys Gln Lys
100 105 110
Val Leu Thr Ser Leu Ala Trp Arg Cys Cys Pro Gly Tyr Thr Gly Pro
115 120 125
Asn Cys Glu His His Asp Ser Met Ala Ile Pro Glu Pro Ala Asp Pro
130 135 140
Gly Asp Ser His Gln Glu Pro Gln Asp Gly Pro Val Ser Phe Lys Pro
145 150 155 160
Gly His Leu Ala Ala Val Ile Asn Glu Val Glu Val Gln Gln Glu Gln
165 170 175
Gln Glu His Leu Leu Gly Asp Leu Gln Asn Asp Val His Arg Val Ala
180 185 190
Asp Ser Leu Pro Gly Leu Trp Lys Ala Leu Pro Gly Asn Leu Thr Ala
195 200 205
Ala Val Met Glu Ala Asn Gln Thr Gly His Glu Phe Pro Asp Arg Ser
210 215 220
Leu Glu Gln Val Leu Leu Pro His Val Asp Thr Phe Leu Gln Val His
225 230 235 240
Phe Ser Pro Ile Trp Arg Ser Phe Asn Gln Ser Leu His Ser Leu Thr
245 250 255
Gln Ala Ile Arg Asn Leu Ser Leu Asp Val Glu Ala Asn Arg Gln Ala
260 265 270
Ile Ser Arg Val Gln Asp Ser Ala Val Ala Arg Ala Asp Phe Gln Glu
275 280 285
Leu Gly Ala Lys Phe Glu Ala Lys Val Gln Glu Asn Thr Gln Arg Val
290 295 300
Gly Gln Leu Arg Gln Asp Val Glu Asp Arg Leu His Ala Gln His Phe
305 310 315 320
Thr Leu His Arg Ser Ile Ser Glu Leu Gln Ala Asp Val Asp Thr Lys

```
                325                     330                     335
Leu Lys Arg Leu His Lys Ala Gln Glu Ala Pro Gly Thr Asn Gly Ser
            340                     345                     350
Leu Val Leu Glu Arg
        355     357
```

<210> 1887
<211> 86
<212> PRT
<213> Homo sapiens

<400> 1887

```
Met Leu Cys Ser Arg Leu Gly Thr Thr Ala Ser Trp Arg Arg Leu Gly
  1               5                  10                  15
Ile Arg Ala Trp Ala Pro Leu Leu Leu Leu Phe Pro Trp Asp Trp His
             20                  25                  30
Phe Ile Leu Ser Phe Ser Ser Arg Pro Trp Ala Gly Thr Leu Leu Ala
         35                  40                  45
Pro His Asp Val Ile Met Gly Ser Ser Thr Phe Pro Gln Ser Cys Gln
     50                  55                  60
Ala Glu Ala Gly Pro Arg His Ala Trp Pro Thr Gly Arg Phe Ser Arg
 65                  70                  75                      80
Arg Leu Arg Arg Val  *
                 85
```

<210> 1888
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1888

```
Met Ser Val Arg Arg Ala Leu Thr Pro Ser Ala Leu Gly Leu Val Phe
  1               5                  10                  15
Ile Leu Gln Ile Phe Ala His Gly Leu Pro Gly Pro Gly Pro Cys His
             20                  25                  30
Leu Gly Pro Gly Ile Cys Leu Arg Ile Cys Gln Cys Ala Leu Asn  *
         35                  40                  45      47
```

<210> 1889
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1889

```
Met Ser Val Val Met Leu Ser Tyr Leu Leu Ser Ala Phe Phe Ser Gln
  1               5                  10                  15
Ala Asn Thr Ala Ala Leu Cys Thr Ser Leu Val Tyr Met Ile Ser Phe
             20                  25                  30
Leu Pro Tyr Ile Val Leu Leu Val Leu His Asn Gln Leu Ser Phe Val
         35                  40                  45
```

Asn Gln Thr Phe Leu Cys Leu Leu Ser Thr Thr Ala Phe Gly Gln Gly
    50   55   60
Val Phe Phe Ile Thr Phe Leu Glu Gly Gln Glu Thr Gly Ile His
65   70   75   79

<210> 1890
<211> 251
<212> PRT
<213> Homo sapiens

<400> 1890
Met Asn Val Ile Tyr Phe Pro Leu His Leu Phe Val Val Tyr Ser Arg
 1   5   10   15
Ala Tyr Thr Ser Leu Val Leu Val Gly Cys Thr Asn Leu Cys Ala Val
            20   25   30
Leu Phe Ala Arg Cys Leu Asp Asp His Leu Val Ser Leu Arg Met Ser
        35   40   45
Gly Ser Arg Lys Glu Phe Asp Val Lys Gln Ile Leu Lys Ile Arg Trp
    50   55   60
Arg Trp Phe Gly His Gln Ala Ser Ser Pro Asn Ser Thr Val Asp Ser
65   70   75   80
Gln Gln Gly Glu Phe Trp Asn Arg Gly Gln Thr Gly Ala Asn Gly Gly
                85   90   95
Arg Lys Phe Leu Asp Pro Cys Ser Leu Gln Leu Pro Leu Ala Ser Ile
            100   105   110
Gly Tyr Arg Arg Ser Ser Gln Leu Asp Phe Gln Asn Ser Pro Ser Trp
        115   120   125
Pro Met Ala Ser Thr Ser Glu Val Pro Ala Phe Glu Phe Thr Ala Glu
    130   135   140
Asp Cys Gly Gly Ala His Trp Leu Asp Arg Pro Glu Val Asp Asp Gly
145   150   155   160
Thr Ser Glu Glu Glu Asn Glu Ser Asp Ser Ser Ser Cys Arg Thr Ser
                165   170   175
Asn Ser Ser Gln Thr Leu Ser Ser Cys His Thr Met Glu Pro Cys Thr
            180   185   190
Ser Asp Glu Phe Phe Gln Ala Leu Asn His Ala Glu Gln Thr Phe Lys
        195   200   205
Lys Met Glu Asn Tyr Leu Arg His Lys Gln Leu Cys Asp Val Ile Leu
    210   215   220
Val Ala Gly Asp Arg Arg Ile Pro Ala His Arg Leu Val Leu Ser Ser
225   230   235   240
Val Ser Asp Tyr Phe Ala Gly Met Phe Thr Asn
                245   250 251

<210> 1891
<211> 117
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(117)
<223> Xaa = any amino acid or nothing

<400> 1891
Met Leu Ile Asp Val Phe Phe Phe Leu Phe Leu Phe Ala Xaa Trp Met
1 5 10 15
Val Ala Phe Gly Val Ala Arg Gln Gly Ile Leu Arg Gln Asn Glu Gln
20 25 30
Arg Trp Arg Trp Ile Phe Arg Ser Val Ile Tyr Glu Pro Tyr Leu Ala
35 40 45
Met Phe Gly Gln Val Pro Ser Asp Val Asp Gly Thr Thr Tyr Asp Phe
50 55 60
Ala His Cys Thr Phe Thr Gly Asn Glu Ser Lys Pro Leu Cys Val Glu
65 70 75 80
Leu Asp Glu His Asn Leu Pro Arg Phe Pro Glu Trp Ile Thr Ile Pro
85 90 95
Leu Val Cys Ile Tyr Met Leu Ser Thr Asn Ile Leu Leu Val Asn Leu
100 105 110
Leu Val Ala Met Phe
115 117

<210> 1892
<211> 103
<212> PRT
<213> Homo sapiens

<400> 1892
Met Leu Cys His Pro His Val His His His Leu Val Cys Leu Leu Ala
1 5 10 15
Thr Leu Thr Phe Ser Leu Asn Ala Ser Cys Ala Glu Gln Thr Phe His
20 25 30
Ser Gln Gln Ser Asn Gly Glu Phe Met Ala Thr Leu Pro Ser Ile Ser
35 40 45
Lys Gln Phe Gly Val Ile Val Trp Lys Pro Gln Arg Lys Asp Val Ile
50 55 60
Arg Leu Pro Val Ala Leu Ser Phe Ser Ser Gly Ala Arg Leu Ala Phe
65 70 75 80
Thr Cys Leu Arg Lys Ile Ser Gly Phe Arg Ala Leu Ile Trp Gly Glu
85 90 95
Asp Lys Gly Trp Asp Leu *
100 102

<210> 1893
<211> 77
<212> PRT
<213> Homo sapiens

<221> misc_feature
<222> (1)...(77)
<223> Xaa = any amino acid or nothing

<400> 1893
Met Leu Ala Ala Gly Val Thr Ser Ala Ala Gly Leu Ala Leu Ala Phe
1 5 10 15
Ser Gly Asp Tyr Leu Lys Ala Phe Ile Asp Val Pro Thr Val Pro Ala
20 25 30

Ala Leu Val Phe Leu Leu Leu Val Gly Leu Leu Asn Ala Arg Gly Ile
35 40 45
Lys Glu Ser Met Arg Ala Xaa Val Val Met Thr Val Val Glu Val Thr
50 55 60
Gly Leu Val Leu Val Val Val Leu Ala Leu Val Pro Gly
65 70 75 77

<210> 1894
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1894
Met Trp Ala Ala Ser Trp Cys Leu Ser Leu Trp Cys Cys Trp Val Trp
1 5 10 15
Ser Gly Thr Ser Glu Ser Ile Thr Ala Asn Ser Ser Gln His Leu Pro
20 25 30
Leu Ser Pro Trp Trp Glu Ser Pro Ser Ser Ser Ala Ser *
35 40 45

<210> 1895
<211> 162
<212> PRT
<213> Homo sapiens

<400> 1895
Met Thr Ala Trp Arg Arg Phe Gln Ser Leu Leu Leu Leu Leu Gly Leu
1 5 10 15
Leu Val Leu Cys Ala Arg Leu Leu Thr Ala Ala Lys Gly Gln Asn Cys
20 25 30
Gly Gly Leu Val Gln Gly Pro Asn Gly Thr Ile Glu Ser Pro Gly Phe
35 40 45
Pro His Gly Tyr Pro Asn Tyr Ala Asn Cys Thr Trp Ile Ile Ile Thr
50 55 60
Gly Glu Arg Asn Arg Ile Gln Leu Ser Phe His Thr Phe Ala Leu Glu
65 70 75 80
Glu Asp Phe Asp Ile Leu Ser Val Tyr Asp Gly Gln Pro Gln Gln Gly
85 90 95
Asn Leu Lys Val Arg Leu Ser Gly Phe Gln Leu Pro Ser Ser Ile Val
100 105 110
Ser Thr Gly Ser Ile Leu Thr Leu Trp Phe Thr Thr Asp Phe Ala Val
115 120 125
Ser Ala Gln Gly Phe Lys Ala Leu Tyr Glu Gly Arg Arg Leu Val Val
130 135 140
Phe Cys Thr Cys Ile His Cys Pro Asn Asp Leu Ile His Ala Thr Leu
145 150 155 160
Asp *
161

<210> 1896
<211> 60

<212> PRT
<213> Homo sapiens

<400> 1896
Met Leu Ser Leu Pro Cys Gly Trp Leu Cys Thr Ala Ile Gly Leu Pro
1 5 10 15
Thr Met Phe Gly Tyr Ile Ile Cys Gly Val Leu Leu Gly Pro Ser Gly
20 25 30
Leu Asn Ser Ile Lys Val Arg Thr Lys Leu Asp Cys Phe Gly Ile Cys
35 40 45
Leu Thr Glu Tyr Lys Lys Arg Ile His Glu Asp *
50 55 59

<210> 1897
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1897
Met Leu Ile Val Gln Phe Ile Phe Glu Leu Val Ser Ser Ile Leu Val
1 5 10 15
Ser Asn Val Lys Asp Met Leu Asp Phe Glu Ser Gly Phe Cys Ser Lys
20 25 30
Ile Leu Ser Tyr Phe Phe Ser Ser Pro Arg Tyr Arg Leu Pro Phe Leu
35 40 45 48
*

<210> 1898
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1898
Met Thr Trp Ala Gly Leu Phe Leu Phe Leu Arg Val Gly Ser Pro Asn
1 5 10 15
Arg Lys Trp Ala Ala Ser Gly Gly Ser Gly Gly Asp Gly Val Asp Gly
20 25 30
Glu Asp Trp Ser Leu Ala Arg Ser His Pro Gln Ser Pro Leu Leu Leu
35 40 45
Leu Leu Leu *
50 51

<210> 1899
<211> 112
<212> PRT
<213> Homo sapiens

<400> 1899

Met Ala Ile Pro Ser Val Val Ile Ser Gly Leu Ala Val Leu Leu Val
1 5 10 15
Ala Met Ala Leu Pro Ser Leu Ser Gly Ser Glu Ala Ile Lys Ser Met
20 25 30
Thr Ile Pro Gly Leu Val Val Pro Thr Val Val Arg Phe Met Ala Val
35 40 45
Pro Gly Leu Ile Val Pro Ala Val Ala Lys Phe Thr Val Leu Pro Asp
50 55 60
Leu Thr Val Pro Thr Glu Asp Lys Ser Leu Ala Val Pro Ser Leu Ile
65 70 75 80
Ser Arg Ala Gly Asn Ser Val Pro Val Ser Ser Trp Asp Val Phe Gly
85 90 95
Val Ala Lys Leu Ile Ala Lys Leu Gly Leu Leu Ala Ala Ile Val Ala
100 105 110 112

<210> 1900
<211> 128
<212> PRT
<213> Homo sapiens

<400> 1900
Met Arg Val Tyr Gly Thr Cys Thr Leu Val Leu Met Ala Leu Val Val
1 5 10 15
Phe Val Gly Val Lys Tyr Val Asn Lys Leu Ala Leu Val Phe Leu Ala
20 25 30
Cys Val Val Leu Ser Ile Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser
35 40 45
Ala Phe Asp Pro Pro Asp Ile Pro Val Cys Leu Leu Gly Asn Arg Thr
50 55 60
Leu Ser Arg Arg Ser Phe Asp Ala Cys Val Lys Ala Tyr Gly Ile His
65 70 75 80
Asn Asn Ser Ala Thr Ser Ala Leu Trp Gly Leu Phe Cys Asn Gly Ser
85 90 95
Gln Pro Ser Ala Ala Cys Asp Glu Tyr Phe Ile Gln Asn Asn Val Thr
100 105 110
Glu Ile Gln Gly Ile Pro Gly Ala Ala Ser Gly Val Phe Leu Glu Asn
115 120 125 128

<210> 1901
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1901
Met Glu Leu Leu Lys Leu Leu Leu Thr Cys Phe Ser Glu Ala Met Tyr
1 5 10 15
Leu Pro Pro Ala Pro Glu Ser Gly Ser Thr Asn Pro Trp Val Gln Phe
20 25 30
Phe Cys Ser Thr Glu Asn Arg His Ala Leu Pro Leu Phe Thr Ser Leu

```
        35                  40                  45
Leu Asn Thr Val Cys Ala Tyr Asp Pro Val Glu Tyr Gly Ile Pro Tyr
    50                  55                  60
Asn His Leu Tyr
 65         68


     <210> 1902
     <211> 127
     <212> PRT
     <213> Homo sapiens


     <400> 1902
Met Tyr Phe Ser Ser Leu Phe Pro Tyr Val Val Leu Ala Cys Phe Leu
  1               5                  10                  15
Val Arg Gly Leu Leu Leu Arg Gly Ala Val Asp Gly Ile Leu His Met
             20                  25                  30
Phe Thr Pro Lys Leu Asp Lys Met Leu Asp Pro Gln Val Trp Arg Glu
        35                  40                  45
Ala Ala Thr Gln Val Phe Ser Ala Leu Gly Leu Gly Phe Gly Gly Val
    50                  55                  60
Ile Ala Phe Ser Ser Tyr Asn Lys Gln Asp Asn Asn Cys His Phe Asp
 65                  70                  75                  80
Ala Ala Leu Val Ser Phe Ile Asn Phe Phe Thr Ser Val Leu Ala Thr
                 85                  90                  95
Leu Val Val Phe Ala Val Leu Gly Phe Lys Ala Asn Ile Met Asn Glu
            100                 105                 110
Lys Cys Val Val Glu Asn Ala Glu Lys Ile Leu Gly Tyr Arg Val
        115                 120                 125     127


     <210> 1903
     <211> 83
     <212> PRT
     <213> Homo sapiens


     <400> 1903
Met Trp Lys Phe Val Ser Pro Leu Cys Met Ala Val Leu Thr Thr Ala
  1               5                  10                  15
Ser Ile Ile Gln Leu Gly Val Thr Pro Pro Gly Tyr Ser Ala Trp Ile
             20                  25                  30
Lys Glu Glu Ala Ala Glu Arg Tyr Leu Tyr Phe Pro Asn Trp Ala Met
        35                  40                  45
Ala Pro Leu Ile Thr Leu Ile Val Val Ala Thr Leu Pro Ile Pro Val
    50                  55                  60
Val Phe Val Leu Arg His Phe His Leu Ile Cys Asp Gly Ser Asn Thr
 65                  70                  75                  80
Pro Cys Ile
        83


     <210> 1904
     <211> 129
     <212> PRT
```

<213> Homo sapiens

<400> 1904

```
Met Lys Met Phe Val Ala His Gly Phe Tyr Ala Ala Lys Phe Val Val
 1               5                  10                  15
Ala Ile Gly Ser Val Ala Gly Leu Thr Val Ser Leu Leu Gly Ser Leu
            20                  25                  30
Phe Pro Met Pro Arg Val Ile Tyr Ala Met Ala Gly Asp Gly Leu Leu
        35                  40                  45
Phe Arg Phe Leu Ala His Val Ser Ser Tyr Thr Glu Thr Pro Val Val
    50                  55                  60
Ala Cys Ile Val Ser Gly Phe Leu Ala Ala Leu Leu Ala Leu Leu Val
65                  70                  75                  80
Ser Leu Arg Asp Leu Ile Glu Met Met Ser Ile Gly Thr Leu Leu Ala
                85                  90                  95
Tyr Thr Leu Val Ser Val Cys Val Leu Leu Leu Arg His His Pro Glu
            100                 105                 110
Ser Asp Ile Asp Gly Phe Val Lys Phe Leu Ser Glu Glu His Thr Cys
        115                 120                 125
Ser
129
```

<210> 1905
<211> 93
<212> PRT
<213> Homo sapiens

<400> 1905

```
Met Gly Leu Leu Met Met Ile Leu Gly Gln Ile Phe Leu Asn Gly Asn
 1               5                  10                  15
Gln Ala Lys Glu Ala Glu Ile Trp Glu Met Leu Trp Arg Met Gly Val
            20                  25                  30
Gln Arg Glu Arg Arg Leu Ser Ile Phe Gly Asn Pro Lys Arg Leu Leu
        35                  40                  45
Ser Val Glu Phe Val Trp Gln Arg Tyr Leu Asp Tyr Arg Pro Val Thr
    50                  55                  60
Asp Cys Lys Pro Val Glu Tyr Glu Phe Phe Trp Gly Pro Arg Ser His
65                  70                  75                  80
Leu Glu Thr Thr Lys Met Lys Ile Leu Lys Phe Met Ala
                85                  90          93
```

<210> 1906
<211> 66
<212> PRT
<213> Homo sapiens

<400> 1906

```
Met Thr Ile Gly Phe Leu Phe Pro Met Leu Ser Ile Ala Tyr Leu Ile
 1               5                  10                  15
Ser Pro Arg Ser Asn Leu Gly Leu Phe Ile Lys Lys Pro Phe Ile Lys
            20                  25                  30
Phe Ile Cys His Thr Ala Ser Tyr Leu Thr Phe Leu Ser Met Leu Leu
```

```
        35                  40                  45
Leu Ala Ser Gln His Ile Val Arg Thr Asp Leu His Val Gln Gly Pro
    50                  55                  60
Cys Ile
 65  66
```

<210> 1907
<211> 105
<212> PRT
<213> Homo sapiens

<400> 1907

```
Met Leu Gln Leu Gly Pro Phe Leu Tyr Trp Thr Phe Leu Ala Ala Phe
  1               5                  10                  15
Glu Gly Thr Val Phe Phe Phe Gly Thr Tyr Phe Leu Phe Gln Thr Ala
             20                  25                  30
Ser Leu Glu Glu Asn Gly Lys Val Tyr Gly Asn Trp Thr Phe Gly Thr
        35                  40                  45
Ile Val Phe Thr Val Leu Val Phe Thr Val Thr Leu Lys Leu Ala Leu
    50                  55                  60
Asp Thr Arg Phe Trp Thr Trp Ile Asn His Phe Val Ile Trp Gly Ser
 65                  70                  75                  80
Leu Ala Phe Tyr Val Phe Phe Ser Phe Phe Trp Gly Gly Ile Ile Trp
                 85                  90                  95
Pro Phe Leu Lys Gln Gln Arg Met Ala
            100                 105
```

<210> 1908
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1908

```
Met Gly Phe Leu Val Leu Lys Gln Pro Met Leu Val Ala Lys Val Phe
  1               5                  10                  15
Pro Thr Leu Ala Gly Val Glu Ile Ile Leu Phe Thr Leu Lys Gly Phe
             20                  25                  30
Pro Ile Leu Gly Ile Pro Val Gln Leu Pro Pro Thr Val  *
        35                  40                  45
```

<210> 1909
<211> 139
<212> PRT
<213> Homo sapiens

<400> 1909

```
Met Ile Gln Ala Leu Gly Gly Phe Phe Thr Tyr Phe Val Ile Leu Ala
  1               5                  10                  15
Glu Asn Gly Phe Leu Pro Ile His Leu Leu Gly Leu Arg Glu Asp Trp
             20                  25                  30
```

Asp Asp Arg Trp Ile Asn Asp Val Glu Asp Ser Tyr Gly Gln Gln Trp
35 40 45
Thr Tyr Glu Gln Arg Lys Ile Val Glu Phe Thr Cys His Thr Ala Phe
50 55 60
Phe Val Ser Ile Val Gly Val Gln Trp Ala Asp Leu Val Ile Cys Lys
65 70 75 80
Thr Arg Arg Asn Ser Val Phe Gln Pro Gly Met Lys Asn Lys Ile Leu
85 90 95
Ile Phe Gly Leu Phe Glu Glu Thr Ala Leu Ala Ala Phe Leu Ser Tyr
100 105 110
Cys Pro Gly Met Gly Val Ala Leu Lys Met Tyr Pro Leu Lys Pro Thr
115 120 125
Trp Arg Val Cys Ala Phe Pro Tyr Ser Leu Leu
130 135 139

<210> 1910
<211> 104
<212> PRT
<213> Homo sapiens

<400> 1910
Met Glu Gly Trp Phe Ala Val Leu Ser Thr Ala Asn Asp Val Leu Gly
1 5 10 15
Ala Pro Trp Asn Trp Leu Tyr Phe Ile Pro Leu Leu Ile Ile Gly Ala
20 25 30
Phe Phe Val Pro Thr Leu Val Leu Gly Val Leu Ser Gly Asp Phe Ala
35 40 45
Lys Glu Arg Glu Arg Val Glu Thr Arg Arg Ala Phe Met Lys Leu Arg
50 55 60
Arg Gln Gln Gln Ile Glu Arg Glu Leu Asn Gly Tyr Arg Val Trp Ile
65 70 75 80
Ala Lys Ala Glu Glu Val Met Leu Ala Glu Glu Asn Leu Tyr Pro Ser
85 90 95
His Ala Arg Pro Val Asn Pro *
100 103

<210> 1911
<211> 116
<212> PRT
<213> Homo sapiens

<400> 1911
Met Ala Val Ala Val Leu Leu Cys Gly Cys Ile Val Ala Thr Val Ser
1 5 10 15
Phe Phe Trp Glu Glu Ser Leu Thr Gln His Val Ala Gly Leu Leu Phe
20 25 30
Leu Met Thr Gly Ile Phe Cys Thr Ile Ser Leu Cys Thr Tyr Ala Ala
35 40 45
Ser Ile Ser Tyr Asp Leu Asn Arg Leu Pro Lys Leu Ile Tyr Ser Leu
50 55 60
Pro Ala Asp Val Glu His Gly Tyr Ser Trp Ser Ile Phe Cys Ala Trp
65 70 75 80
Cys Ser Leu Gly Phe Ile Val Ala Ala Gly Gly Leu Cys Ile Ala Tyr

```
                    85                          90                          95
Pro Phe Ile Ser Arg Thr Lys Ile Ala Gln Leu Lys Ser Gly Arg Asp
                100                         105                         110
Ser Thr Val  *
        115


     <210> 1912
     <211> 105
     <212> PRT
     <213> Homo sapiens


     <400> 1912
Met Gln Leu Lys Thr Pro Ser Gly Gln Val Leu Ser Phe Cys Ile Leu
 1               5                  10                  15
Gln Leu Phe Pro Phe Thr Ser Glu Ser Lys Arg Met Gly Val Ile Val
            20                  25                  30
Arg Asp Glu Ser Thr Ala Glu Ile Thr Phe Tyr Met Lys Gly Ala Asp
        35                  40                  45
Val Ala Met Ser Pro Ile Val Gln Tyr Asn Asp Trp Leu Glu Glu Glu
    50                  55                  60
Cys Gly Asn Met Ala Arg Glu Gly Leu Arg Thr Leu Val Val Ala Lys
 65                  70                  75                  80
Lys Ala Leu Thr Glu Glu Gln Tyr Gln Asp Phe Glu Ser Arg Tyr Thr
                85                  90                  95
Gln Ala Lys Leu Ser Met His Thr Lys
            100                 105


     <210> 1913
     <211> 141
     <212> PRT
     <213> Homo sapiens


     <400> 1913
Met Leu Val Tyr Val Trp Ser Arg Arg Ser Pro Arg Val Arg Val Asn
 1               5                  10                  15
Phe Phe Gly Leu Leu Thr Phe Gln Ala Pro Phe Leu Pro Trp Ala Leu
            20                  25                  30
Met Gly Phe Ser Leu Leu Leu Gly Asn Ser Ile Leu Val Asp Leu Leu
        35                  40                  45
Gly Ile Ala Val Gly His Ile Tyr Tyr Phe Leu Glu Asp Val Phe Pro
    50                  55                  60
Asn Gln Pro Gly Arg Gln Glu Ala Pro Ala Asp Pro Trp Ala Phe Leu
 65                  70                  75                  80
Lys Leu Leu Leu Gly Cys Pro Cys Arg Arg Pro Gln Leu Thr Cys Pro
                85                  90                  95
Ser Leu Arg Asn Ser Gln Asp Pro Ile Cys His Pro Arg Ser Ser Asp
            100                 105                 110
Pro His Pro Gly Ala Arg Pro Lys Arg Leu Leu Ala Ala Ser Ile Leu
        115                 120                 125
Pro Met Thr Pro Thr Trp Gly Arg Lys Asn Pro Ser  *
    130                 135                 140
```

<210> 1914
<211> 556
<212> PRT
<213> Homo sapiens

<400> 1914
Met Lys Lys Val Leu Leu Leu Leu Trp Lys Thr Val Leu Cys Thr Leu
1 5 10 15
Gly Gly Phe Glu Glu Leu Gln Ser Met Lys Ala Glu Lys Arg Ser Ile
20 25 30
Leu Gly Leu Pro Pro Leu Pro Glu Asp Ser Ile Lys Val Ile Arg Asn
35 40 45
Met Arg Ala Ala Ser Pro Pro Ala Ser Ala Ser Asp Leu Ile Glu Gln
50 55 60
Gln Gln Lys Arg Gly Arg Arg Glu His Lys Ala Leu Ile Lys Gln Asp
65 70 75 80
Asn Leu Asp Ala Phe Asn Glu Arg Asp Pro Tyr Lys Ala Asp Asp Ser
85 90 95
Arg Glu Glu Glu Glu Glu Asn Asp Asp Asp Asn Ser Leu Glu Gly Glu
100 105 110
Thr Phe Pro Leu Glu Arg Asp Glu Val Met Pro Pro Pro Leu Gln His
115 120 125
Pro Gln Thr Asp Arg Leu Thr Cys Pro Lys Gly Leu Pro Trp Ala Pro
130 135 140
Lys Val Arg Glu Lys Asp Ile Glu Met Phe Leu Glu Ser Ser Arg Ser
145 150 155 160
Lys Phe Ile Gly Tyr Thr Leu Gly Ser Asp Thr Asn Thr Val Val Gly
165 170 175
Leu Pro Arg Pro Ile His Glu Ser Ile Lys Thr Leu Lys Gln His Lys
180 185 190
Tyr Thr Ser Ile Ala Glu Val Gln Ala Gln Met Glu Glu Glu Tyr Leu
195 200 205
Arg Ser Pro Leu Ser Gly Gly Glu Glu Glu Val Glu Gln Val Pro Ala
210 215 220
Glu Thr Leu Tyr Gln Gly Leu Leu Pro Ser Leu Pro Gln Tyr Met Ile
225 230 235 240
Ala Leu Leu Lys Ile Leu Leu Ala Ala Ala Pro Thr Ser Lys Ala Lys
245 250 255
Thr Asp Ser Ile Asn Ile Leu Ala Asp Val Leu Pro Glu Glu Met Pro
260 265 270
Thr Thr Val Leu Gln Ser Met Lys Leu Gly Val Asp Val Asn Arg His
275 280 285
Lys Glu Val Ile Val Lys Ala Ile Ser Ala Val Leu Leu Leu Leu Leu
290 295 300
Lys His Phe Lys Leu Asn His Val Tyr Gln Phe Glu Tyr Met Ala Gln
305 310 315 320
His Leu Val Phe Ala Asn Cys Ile Pro Leu Ile Leu Lys Phe Phe Asn
325 330 335
Gln Asn Ile Met Ser Tyr Ile Thr Ala Lys Asn Ser Ile Ser Val Leu
340 345 350
Asp Tyr Pro His Cys Val Val His Glu Leu Pro Glu Leu Thr Ala Glu
355 360 365
Ser Leu Glu Ala Gly Asp Ser Asn Gln Phe Cys Trp Arg Asn Leu Phe
370 375 380
Ser Cys Ile Asn Leu Leu Arg Ile Leu Asn Lys Leu Thr Lys Trp Lys
385 390 395 400
His Ser Arg Thr Met Met Leu Val Val Phe Lys Ser Ala Pro Ile Leu

405 410 415
Lys Arg Ala Leu Lys Val Lys Gln Ala Met Met Gln Leu Tyr Val Leu
420 425 430
Lys Leu Leu Lys Val Gln Thr Lys Tyr Leu Gly Arg Gln Trp Arg Lys
435 440 445
Ser Asn Met Lys Thr Met Ser Ala Ile Tyr Gln Lys Val Arg His Arg
450 455 460
Leu Asn Asp Asp Trp Ala Tyr Gly Asn Asp Leu Asp Ala Arg Pro Trp
465 470 475 480
Asp Phe Gln Ala Glu Glu Cys Ala Leu Arg Ala Asn Ile Glu Arg Phe
485 490 495
Asn Ala Arg Arg Tyr Asp Arg Ala His Ser Asn Pro Asp Phe Leu Pro
500 505 510
Val Asp Asn Cys Leu Gln Ser Val Leu Gly Gln Arg Val Asp Leu Pro
515 520 525
Glu Asp Phe Gln Met Asn Tyr Asp Leu Trp Leu Glu Arg Glu Val Phe
530 535 540
Ser Lys Pro Ile Ser Trp Glu Glu Leu Leu Gln *
545 550 555

<210> 1915
<211> 212
<212> PRT
<213> Homo sapiens

<400> 1915
Met Phe Leu Val Ala Val Trp Trp Arg Phe Gly Ile Leu Ser Ile Cys
1 5 10 15
Met Leu Cys Val Gly Leu Val Leu Gly Phe Leu Ile Ser Ser Val Thr
20 25 30
Phe Phe Thr Pro Leu Gly Asn Leu Lys Ile Phe His Asp Asp Gly Val
35 40 45
Phe Trp Val Thr Phe Ser Cys Ile Ala Ile Leu Ile Pro Val Val Phe
50 55 60
Met Gly Cys Leu Arg Ile Leu Asn Ile Leu Thr Cys Gly Val Ile Gly
65 70 75 80
Ser Tyr Ser Val Val Leu Ala Ile Asp Ser Tyr Trp Ser Thr Ser Leu
85 90 95
Ser Tyr Ile Thr Leu Asn Val Leu Lys Arg Ala Leu Asn Lys Asp Phe
100 105 110
His Arg Ala Phe Thr Asn Val Pro Phe Gln Thr Asn Asp Phe Ile Ile
115 120 125
Leu Ala Val Trp Gly Met Leu Ala Val Ser Gly Ile Thr Leu Gln Ile
130 135 140
Arg Arg Glu Arg Gly Arg Pro Phe Phe Pro Pro His Pro Tyr Lys Leu
145 150 155 160
Trp Lys Gln Glu Arg Glu Arg Arg Val Thr Asn Ile Leu Asp Pro Ser
165 170 175
Tyr His Ile Pro Pro Leu Arg Glu Arg Leu Tyr Gly Arg Leu Thr Gln
180 185 190
Ile Lys Gly Leu Phe Gln Lys Glu Gln Pro Ala Gly Glu Arg Thr Pro
195 200 205
Leu Leu Leu *
210 211

<210> 1916
<211> 172
<212> PRT
<213> Homo sapiens

<400> 1916
Met Cys Thr Pro Val Arg Val Ser Ile Val Cys Val Met Gly Ala Val
1 5 10 15
Gly Ala Val Trp Thr Ala Pro Leu Pro Leu Pro Trp Ala Pro Thr Pro
20 25 30
Ser Ile His Leu Arg Glu Glu Gly Ala Ala Phe Pro Phe Cys Gly Val
35 40 45
Cys Val Leu Arg Pro Arg Arg Ser Lys Trp Arg Ser Trp Asp Val Asn
50 55 60
Leu Gly Pro Arg Arg Arg Gly Leu Leu Gly Cys Gly Pro Cys Pro Ser
65 70 75 80
Gly Lys Pro Arg Val His Leu Gln Arg Thr Arg Ser Gly Ala Gly Ala
85 90 95
Glu Ala Gly Gly Leu Pro Thr Arg Gly Ser Met Arg Gly Cys Pro Phe
100 105 110
Leu Gly Ser Ser Ala Ala Lys Cys Ser Leu Leu Leu Arg Pro Pro Ser
115 120 125
Arg Gly Glu Ala Ser Pro Trp Leu Pro Glu Phe Met Thr His Pro Val
130 135 140
His His Gln Gln Leu Ala Cys Gly Ser Gly Trp Leu Gly Thr Lys His
145 150 155 160
Pro Gly Gly Thr Cys Ala Leu Gly Ser Thr Met *
165 170 171

<210> 1917
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1917
Met Leu Arg Trp Gly Phe Leu Glu Ile Leu Phe Leu Arg Ser Trp Phe
1 5 10 15
His Ser Trp Ile Cys Leu Leu Pro Thr Pro Gln Leu Pro Pro Asn Gly
20 25 30
Ala Ser Ala Gly Ser Gln Asp Glu Gly Ser Arg Arg Arg Leu Ser Leu
35 40 45
Glu Val Arg Gly Leu Met Asn His Val Pro Asn Leu Cys Val Ala Phe
50 55 60
Leu Ser Ile Val Ser Ile Ser *
65 70 71

<210> 1918
<211> 88
<212> PRT
<213> Homo sapiens

<400> 1918
Met Thr Ser Leu Met Phe Leu Trp Arg Ala Leu Leu Glu Thr Ile Ser
1   5   10   15
Thr Asn Met Thr Phe Ser Leu Pro Leu Ala Ala Val Val Arg Ala Trp
            20   25   30
Met Lys Pro Thr Gly Ser Gly Met Phe Leu Tyr Gln Tyr Leu Pro Val
        35   40   45
Val Lys Ser Ser Gln Ala Val Phe Pro Val Val Ile Glu Ile Ser Ser
    50   55   60
Ile Ser Gly Ser Ile Leu Pro Lys Phe Pro Met Leu Ser Leu Met Ser
65   70   75   80
Leu His Thr Gly Ser Ile Ile *
                85   87

<210> 1919
<211> 54
<212> PRT
<213> Homo sapiens

<400> 1919
Met Leu Gly Pro Phe Ser Ser Leu Phe Leu Leu Leu Trp Ser Phe Thr
1   5   10   15
Arg Phe Cys Ile His Phe Tyr Leu Ala Pro Ser His His Cys Leu Thr
            20   25   30
Ala Ala Leu Leu Pro Phe Ser Leu His Pro Leu Tyr Ser Ser Leu Ser
        35   40   45
Leu Ser Arg Ser Gln *
    50   53

<210> 1920
<211> 114
<212> PRT
<213> Homo sapiens

<400> 1920
Met His Pro Pro Leu Thr Pro Pro Thr Pro Leu Cys Leu Trp Leu Arg
1   5   10   15
Leu Leu Lys Ala Gln Ile Leu Ser Tyr Pro Val Pro Arg Phe Glu Thr
            20   25   30
His Ser Leu Ile Ser Arg Cys Ser Gln Val Pro Pro Thr Phe Leu Trp
        35   40   45
Asp Ile Lys Lys Gly Val Arg Gly Gln Arg Glu Pro Ser Gly Pro Leu
    50   55   60
Leu Pro Tyr Thr Leu His Cys Pro Phe Ser Pro His Gln Asn Ala Gln
65   70   75   80
Arg Arg Cys Asp Asp Ala Thr Glu Asp Tyr Ala Thr Trp Ser Asn Arg
                85   90   95
Ser Gly Gln His Asp Gln Leu Ser Arg Gly Cys Leu Leu Pro Phe Leu
            100   105   110
Leu *
113

<210> 1921
<211> 139
<212> PRT
<213> Homo sapiens

<400> 1921
Met Val Tyr Leu Tyr Ile Tyr Leu Asp Leu Phe Gln Phe Leu Ile Thr
1 5 10 15
Val Leu Gln Gly Phe Leu Phe Val Phe Glu Met Glu Phe His Ser Cys
20 25 30
Arg Pro Gly Gln Ser Ala Met Met Gln Ser Gln Leu Ala Ala Thr Ser
35 40 45
Ala Ser Arg Val Gln Val Ile Leu Val Val Ser Ala Pro Gln Glu Ala
50 55 60
Gly Thr Thr Gly Ala Arg His His Val Gln Leu Ile Phe Val Phe Leu
65 70 75 80
Leu Glu Met Gly Phe Cys His Val Gly Gln Ala Gly Leu Glu Leu Leu
85 90 95
Asn Ser Gly Asp Pro Pro Thr Ser Ala Ser Gln Ser Ala Gly Ile Arg
100 105 110
Gly Val Asn His Cys Ala Pro Pro Ile Asn Ser Leu Leu Thr Phe Gln
115 120 125
Ser Phe Ile His Leu Glu Cys Ile Val Ile *
130 135 138

<210> 1922
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1922
Met Trp Leu Ser Phe Pro Lys Leu Phe Ile Pro Leu Ser Ile Phe Leu
1 5 10 15
Val Phe Leu Leu Met Ala Asn Ser Phe Arg Ile Phe Lys Ser Lys Asn
20 25 30
Ile Phe Ile Ser Leu Leu Phe Trp Asn Asp Thr Phe Ala Gly Cys Ile
35 40 45
Phe Leu Thr *
50 51

<210> 1923
<211> 71
<212> PRT
<213> Homo sapiens

<400> 1923
Met Val Ser His Cys Ile Phe Cys Asn Leu Leu Phe Ser Leu Leu Thr
1 5 10 15
Val Phe Leu Arg Leu Leu His Val Asp Thr Cys His Leu Phe Ile Arg
20 25 30
Phe Asn Cys Cys Lys Ile Phe Phe Cys Gln Asp Ile Leu Gln Leu Ile

35 40 45
Tyr Leu Leu Phe Phe Leu Trp Thr Phe Lys Leu Phe Ser Gly Phe Thr
50 55 60
Leu Lys Ile Ile Gln Gln *
65 70

<210> 1924
<211> 187
<212> PRT
<213> Homo sapiens

<400> 1924
Met Leu Phe Ile Gln Tyr Leu Leu Pro Cys Leu Leu Leu Ser Ala Glu
1 5 10 15
Leu Ser Gly Thr Phe Phe Leu Tyr Asn Thr Cys His Leu His Val Pro
20 25 30
Cys Cys His Ser Leu Val Pro Thr Gly Pro Pro Ser Leu Ser Ser His
35 40 45
Phe Gln Ser Arg Gly Leu Cys Ala Pro Cys Ala Ser Ile Ala Asp Ser
50 55 60
Gly Ile Ala Asp Ser Gly Gly Asn Asn Leu Asn Phe Val Gly Ala Gly
65 70 75 80
Gly Val Ala Ser Gly His Leu Leu Ser Pro Leu Leu Gly Pro Gln Ser
85 90 95
Ser Pro Cys Pro His Cys Pro Arg Gly Gly Arg Leu Pro Ser Gln Pro
100 105 110
Leu Pro Leu Cys Ser Ala Arg Ser Trp Ala Gln Glu Ala Leu Arg Leu
115 120 125
Pro Ser Ser Ala Gln Leu Cys Pro Cys His Pro Leu Pro Arg Gly Leu
130 135 140
Gly Pro Val Ser Pro Ser Gly Leu Leu Ala Asn Ile Ser Tyr Arg His
145 150 155 160
Asn Trp Leu Leu Gly Ser Trp Pro Gly Trp Leu Ile Trp Gly Gly Lys
165 170 175
Asn Arg Gly Gly Leu Asn Ser Phe Leu Ala *
180 185 186

<210> 1925
<211> 50
<212> PRT
<213> Homo sapiens

<400> 1925
Met Leu Ser Phe Leu Val Val Phe Gln Leu Val Leu Leu Arg Phe Ser
1 5 10 15
Gly Arg His Ser His His Gln Leu Ile Thr Ile Thr Phe Pro Leu Phe
20 25 30
Gln Trp Leu Tyr Phe Phe Phe Phe Met Phe Phe Cys Thr Gly Trp Lys
35 40 45
Phe *
49

<210> 1926
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1926
Met Gly Arg Tyr Arg Cys Ala Ser Leu Leu Phe Cys Phe Leu Leu Leu
1 5 10 15
Phe Phe Phe Phe Trp Leu Trp Val Arg Asp Ile Phe Lys Leu Ala Gln
20 25 30
Lys Gly Arg Gly Trp Ser Leu Asp Pro His Val Ser Ile Thr *
35 40 45 46

<210> 1927
<211> 149
<212> PRT
<213> Homo sapiens

<400> 1927
Met Ala Thr Gly Leu Leu Ala Phe Leu Gly Leu Ala Ala Gly Gly Gln
1 5 10 15
Thr Leu Cys Pro Ala Gly Glu Leu Pro Gly His Ala Arg Ala Gln Ala
20 25 30
Ser Gly Ala Pro Gly Ser Val Leu Ile Ala Val Pro Gly Arg Arg Arg
35 40 45
Val His Thr Cys Gly Pro Gly Pro Ala Ala Pro Ser Thr Arg Gly Glu
50 55 60
Cys Pro Pro Pro Ala Leu Gly His Thr Arg Pro Ala Arg Pro Arg Pro
65 70 75 80
Val Leu Leu Arg Pro Ser Cys Ser Pro Gly Ala Arg Gly Ala Gly Thr
85 90 95
Trp Cys Cys Ala Pro Ala Thr Gly His Ser Ala Pro Arg Gly Cys Pro
100 105 110
Pro Ala Arg Ala Ala Pro Thr Gly Ser Ala Thr Pro Ala Pro Pro Pro
115 120 125
Ala Ala Cys Ala Ala Phe His Ser Ala Trp Ser Val Pro Pro Ala Gly
130 135 140
Arg Gln Gln Gly *
145 148

<210> 1928
<211> 446
<212> PRT
<213> Homo sapiens

<400> 1928
Met Ser Leu Trp Asn Gln Leu Val Val Pro Val Leu Phe Met Val Phe
1 5 10 15
Trp Leu Val Leu Phe Ala Leu Gln Ile Tyr Ser Tyr Phe Ser Thr Arg
20 25 30
Asp Gln Pro Ala Ser Arg Glu Arg Leu Leu Phe Leu Phe Leu Thr Ser

```
        35                  40                  45
Ile Ala Glu Cys Cys Ser Thr Pro Tyr Ser Leu Leu Gly Leu Val Phe
    50                  55                  60
Thr Val Ser Phe Val Ala Leu Gly Val Leu Thr Leu Cys Lys Phe Tyr
65                  70                  75                  80
Leu Gln Gly Tyr Arg Ala Phe Met Asn Asp Pro Ala Met Asn Arg Gly
                85                  90                  95
Met Thr Glu Gly Val Thr Leu Leu Ile Leu Ala Val Gln Thr Gly Leu
            100                 105                 110
Ile Glu Leu Gln Val Val His Arg Ala Phe Leu Leu Ser Ile Ile Leu
        115                 120                 125
Phe Ile Val Val Ala Ser Ile Leu Gln Ser Met Leu Glu Ile Ala Asp
    130                 135                 140
Pro Ile Val Leu Ala Leu Gly Ala Ser Arg Asp Lys Ser Leu Trp Lys
145                 150                 155                 160
His Phe Arg Ala Val Ser Leu Cys Leu Phe Leu Leu Val Phe Pro Ala
                165                 170                 175
Tyr Met Ala Tyr Met Ile Cys Gln Phe Phe His Met Asp Phe Trp Leu
            180                 185                 190
Leu Ile Ile Ile Ser Ser Ser Ile Leu Thr Ser Leu Gln Val Leu Gly
        195                 200                 205
Thr Leu Phe Ile Tyr Val Leu Phe Met Val Glu Glu Phe Arg Lys Glu
    210                 215                 220
Pro Val Glu Asn Met Asp Asp Val Ile Tyr Tyr Val Asn Gly Thr Tyr
225                 230                 235                 240
Arg Leu Leu Glu Phe Leu Val Ala Leu Cys Val Val Ala Tyr Gly Val
                245                 250                 255
Ser Glu Thr Ile Phe Gly Glu Trp Thr Val Met Gly Ser Met Ile Ile
            260                 265                 270
Phe Ile His Ser Tyr Tyr Asn Val Trp Leu Arg Ala Gln Leu Gly Trp
        275                 280                 285
Lys Ser Phe Leu Leu Arg Arg Asp Ala Val Asn Lys Ile Lys Ser Leu
    290                 295                 300
Pro Ile Ala Thr Lys Glu Gln Leu Glu Lys His Asn Asp Ile Cys Ala
305                 310                 315                 320
Ile Cys Tyr Gln Asp Met Lys Ser Ala Val Ile Thr Pro Cys Ser His
                325                 330                 335
Phe Phe His Ala Gly Cys Leu Lys Lys Trp Leu Tyr Val Gln Glu Thr
            340                 345                 350
Cys Pro Leu Cys His Cys His Leu Lys Asn Ser Ser Gln Leu Pro Gly
        355                 360                 365
Leu Gly Thr Glu Pro Val Leu Gln Pro His Ala Gly Ala Glu Gln Asn
    370                 375                 380
Val Met Phe Gln Glu Gly Thr Glu Pro Pro Gly Gln Glu His Thr Pro
385                 390                 395                 400
Gly Thr Arg Ile Gln Glu Gly Ser Arg Asp Asn Asn Glu Tyr Ile Ala
                405                 410                 415
Arg Arg Pro Asp Asn Gln Glu Gly Ala Phe Asp Pro Lys Glu Tyr Pro
            420                 425                 430
His Ser Ala Lys Asp Glu Ala His Pro Val Glu Ser Ala  *
        435                 440                 445
```

<210> 1929
<211> 120
<212> PRT
<213> Homo sapiens

<400> 1929
Met Val Leu Pro Leu Pro Trp Leu Ser Arg Tyr His Phe Leu Arg Leu
1 5 10 15
Leu Leu Pro Ser Trp Ser Leu Ala Pro Gln Gly Ser His Gly Cys Cys
20 25 30
Ser Gln Asn Pro Lys Ala Ser Met Glu Glu Gln Thr Asn Ser Arg Gly
35 40 45
Asn Gly Lys Met Thr Ser Pro Pro Arg Gly Pro Gly Thr His Arg Thr
50 55 60
Ala Glu Leu Ala Arg Ala Glu Glu Leu Leu Glu Gln Gln Leu Glu Leu
65 70 75 80
Tyr Gln Ala Leu Leu Glu Gly Gln Glu Gly Ala Trp Glu Ala Gln Ala
85 90 95
Leu Val Leu Lys Ile His Lys Leu Lys Glu Gln Met Arg Arg His Gln
100 105 110
Glu Ser Leu Gly Gly Gly Ala *
115 119

<210> 1930
<211> 122
<212> PRT
<213> Homo sapiens

<400> 1930
Met Thr Trp Leu Val Leu Leu Gly Thr Leu Leu Cys Met Leu Arg Val
1 5 10 15
Gly Leu Gly Thr Pro Asp Ser Glu Gly Phe Pro Pro Arg Ala Leu His
20 25 30
Asn Cys Pro Tyr Lys Cys Ile Cys Ala Ala Asp Leu Leu Ser Cys Thr
35 40 45
Gly Leu Gly Leu Gln Asp Val Pro Ala Glu Leu Pro Ala Gly Thr Ala
50 55 60
Asp Leu Asp Leu Ser His Asn Ala Leu Gln Arg Met Arg Pro Gly Trp
65 70 75 80
Leu Ala Pro Leu Phe Gln Leu Arg Ala Leu His Leu Asp His Asn Glu
85 90 95
Leu His Ala Leu Asp Arg Gly Val Phe Val Asn Ala Ser Gly Leu Arg
100 105 110
Leu Leu Asp Leu Ser Ser Asn Ala Glu Phe
115 120 122

<210> 1931
<211> 73
<212> PRT
<213> Homo sapiens

<400> 1931
Met Ala Arg Ala Pro Ser Val Ala Leu Ala Gln Leu Trp Leu Ile Cys
1 5 10 15
Leu Cys Pro Glu Ser Leu Ala Ser Phe Val Gln Ala Val Pro Trp Lys
20 25 30
Val Leu Gln Pro Ser Ser Asn Arg Ser Thr Asp Cys Ser Pro His Met

```
        35                  40                  45
Arg Pro Thr Cys Glu Thr Leu Gly Ser Arg Lys Ala Gln Asp Leu Gly
     50                  55                  60
Ala Gly Tyr Tyr Val Ser Val His  *
 65                  70      72
```

<210> 1932
<211> 68
<212> PRT
<213> Homo sapiens

<400> 1932

```
Met Lys Thr Val Phe Thr Lys Lys Leu Thr Ala Ala Leu Leu Ile Thr
 1               5                  10                  15
Val Pro Asn Cys Lys Gln Pro Arg Cys Pro Ser Met Gly Glu Trp Leu
            20                  25                  30
Asn Lys Leu Gln Tyr Ile His Thr Met Lys Tyr Tyr Ser Thr Ile Lys
        35                  40                  45
Val Asn Tyr Trp Pro Gly Thr Val Ala His Thr Cys Asn Pro Ser Thr
     50                  55                  60
Leu Gly Gly  *
 65      67
```

<210> 1933
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1933

```
Met Gln Gln Arg Lys Met Arg Leu Val Trp Arg Ser Tyr Trp Ser Met
 1               5                  10                  15
Val Gln Thr Pro Met Leu Trp Met Ala Thr Glu Ile Pro His Phe Thr
            20                  25                  30
Gly Gln Pro Leu Arg Thr Met Leu Ser Val Cys Gly Leu Ser  *
        35                  40                  45  46
```

<210> 1934
<211> 86
<212> PRT
<213> Homo sapiens

<400> 1934

```
Met Cys Trp Ser Pro Leu Thr Gly Trp Ala Leu Ser Ser Ser Arg Cys
 1               5                  10                  15
Arg Leu Ser Trp Pro Leu Thr Ser Phe Gly Ser Thr Ala Ser Cys Arg
            20                  25                  30
Pro Thr Thr Gly Trp Arg Gly Leu Met Trp Leu Gln Ala Leu Ser Ser
        35                  40                  45
Ser Gly Tyr Pro Ser Leu Cys Thr Leu Tyr Ser Glu Leu Leu Val Gln
     50                  55                  60
```

```
Ala Val His Arg Lys Ala Gly Asp Thr Glu Val Gln Gln Ser Leu Leu
 65                 70                  75                  80
Leu Leu Leu Lys Lys  *
                 85


     <210> 1935
     <211> 76
     <212> PRT
     <213> Homo sapiens


     <400> 1935
Met Gly Glu Val Pro Lys Ala His Arg Leu Lys Leu Arg Trp Leu Phe
  1               5                  10                  15
Pro Val Ser Leu Cys Arg Ala Pro Leu Leu Ser Thr Ala His Leu Ala
             20                  25                  30
Leu Leu Leu Pro Cys Cys Leu Leu Cys Ser Ser Cys Tyr Tyr Phe Pro
         35                  40                  45
Phe Leu Ser Leu Leu Pro Pro Trp Pro Asn Leu Phe His Arg Asn Ile
     50                  55                  60
Thr Gly Pro Ala Arg His Ser Gly Ser Pro Leu  *
 65                 70                  75


     <210> 1936
     <211> 49
     <212> PRT
     <213> Homo sapiens


     <400> 1936
Met Leu Leu Gln Thr Phe Val Thr Thr Cys Ile Ser Tyr Phe Tyr Trp
  1               5                  10                  15
His Phe Asn Phe Val Trp Ile Gln Phe Asn Val Cys Arg Val Leu Ser
             20                  25                  30
Phe Gln Pro Glu Arg Leu Thr Leu Ala Phe Leu Ile Gly Gln Val Tyr
         35                  40                  45          48
 *


     <210> 1937
     <211> 76
     <212> PRT
     <213> Homo sapiens


     <400> 1937
Met Lys Gly Arg Phe Leu Phe Pro Leu Arg Leu Leu Leu Trp Met Cys
  1               5                  10                  15
Leu His Leu Gln Arg Gln Ala Ser Glu Leu His Gln Pro Ser Met Pro
             20                  25                  30
Gly Cys Pro Leu Thr Ser Ser Ser Arg Leu Phe Asp Asn Ala Gln Met
         35                  40                  45
His Gln Phe Leu Asn Ile His Val Lys Phe Glu Asn Cys Thr Phe Gly
```

```
        50                  55                  60
Glu Ile Lys Phe Tyr Ile Gln Leu Ala Lys Lys Lys
 65                 70                  75  76
```

<210> 1938
<211> 191
<212> PRT
<213> Homo sapiens

<400> 1938

```
Met Ala Asp Glu Lys Thr Phe Arg Ile Gly Phe Ile Val Leu Gly Leu
 1               5                  10                  15
Phe Leu Leu Ala Leu Gly Thr Phe Leu Met Ser His Asp Arg Pro Gln
            20                  25                  30
Val Tyr Gly Thr Phe Tyr Ala Met Gly Ser Val Met Val Ile Gly Gly
        35                  40                  45
Ile Ile Trp Ser Met Cys Gln Cys Tyr Pro Lys Ile Thr Phe Val Pro
    50                  55                  60
Ala Asp Ser Asp Phe Gln Gly Ile Leu Ser Pro Lys Ala Met Gly Leu
 65                 70                  75                  80
Leu Glu Asn Gly Leu Ala Ala Glu Met Lys Ser Pro Ser Pro Gln Pro
                85                  90                  95
Pro Tyr Val Arg Leu Trp Glu Glu Ala Ala Tyr Asp Gln Ser Leu Pro
            100                 105                 110
Asp Phe Ser His Ile Gln Met Lys Val Met Ser Tyr Ser Glu Asp His
        115                 120                 125
Arg Ser Leu Leu Ala Pro Glu Met Gly Gln Pro Lys Leu Gly Thr Ser
    130                 135                 140
Asp Gly Gly Glu Gly Gly Pro Gly Asp Val Gln Ala Trp Met Glu Ala
145                 150                 155                 160
Ala Val Val Ile His Lys Gly Leu Asn Glu Ser Glu Gly Glu Arg Arg
                165                 170                 175
Leu Thr Gln Ser Trp Pro Gly Pro Leu Ala Cys Pro Gln Gly Pro
            180                 185                 190 191
```

<210> 1939
<211> 82
<212> PRT
<213> Homo sapiens

<400> 1939

```
Met Val Arg Ser Ile Arg Leu Leu Phe Phe Phe Gly Trp Gly Phe Ser
 1               5                  10                  15
Thr Thr Gln Gln Pro Ser Leu Cys Gln Asn Ser Leu Met Phe Pro Asp
            20                  25                  30
Gly Ser Ser Phe Thr Pro Leu Ser Glu Ala Pro Lys Gly Ser Phe Pro
        35                  40                  45
Gly Val Trp Thr Thr His Ser Ser Leu Ser Pro Asp Thr Pro Pro Pro
    50                  55                  60
Trp Val His Ser Ala Gly Trp Val Gln Thr Lys Trp Asn Pro Trp Asn
 65                 70                  75                  80
Leu  *
 81
```

<210> 1940
<211> 101
<212> PRT
<213> Homo sapiens

<400> 1940
Met His Val Cys Leu His Ile Trp Gly Leu Gly Val Cys Val Phe Met
1 5 10 15
His Met Met Cys Ala Cys Val Gly Val Tyr Val Cys Pro Phe Met Arg
20 25 30
Tyr Gly Met Gln Ile Cys Ala Cys Ile His Ala His Ser Cys Ser Ala
35 40 45
Cys Val Cys Ser Cys Ile Trp Cys Met His Gly Cys Ser Tyr Leu Trp
50 55 60
Gly Thr Gly Ile Met His Val Cys Ser Ser Val Trp Gly Val Gly Ile
65 70 75 80
Pro Gly Leu Trp Pro Glu Ala Pro Leu Gln Asp Thr Ala Pro Cys Arg
85 90 95
Leu Pro Arg Gly *
100

<210> 1941
<211> 88
<212> PRT
<213> Homo sapiens

<400> 1941
Met Lys Ala Ser Val Leu Ser Pro Ser Phe Leu Leu Val Leu Trp Ser
1 5 10 15
Cys Phe Leu Ser Cys Ser Cys Met Glu Pro Gln Ser Gly Phe Pro Arg
20 25 30
Pro Ser Cys Phe Thr Val Gly Phe Leu Leu Arg Arg Arg Thr Lys Thr
35 40 45
Arg Arg Gln Lys Ala Thr Asn Thr Val Lys Met Arg Thr Thr Lys Ile
50 55 60
Leu Lys Ile Lys Ile Asp Lys Arg Arg Trp Pro Thr Arg Met Ser Ser
65 70 75 80
Lys Trp Asn Pro Lys Glu Trp *
85 87

<210> 1942
<211> 46
<212> PRT
<213> Homo sapiens

<400> 1942
Met Arg Ser Met Gly Phe Arg Ala Gln Gly Leu Pro Phe Gly Ile Arg
1 5 10 15
Gln Thr Trp Leu Arg Ile Leu Asp Leu Leu Leu Thr Cys Thr Leu Pro

```
            20                  25                  30
Phe Gly Ser Arg Asp Val Lys Trp Arg Cys Cys His Leu  *
        35                  40                  45


     &lt;210&gt; 1943
     &lt;211&gt; 155
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens


     &lt;400&gt; 1943
Met Phe Thr Leu Leu Val Leu Leu Ser Gln Leu Pro Thr Val Thr Leu
  1               5                  10                  15
Gly Phe Pro His Cys Ala Arg Gly Pro Lys Ala Ser Lys His Ala Gly
            20                  25                  30
Glu Glu Val Phe Thr Ser Lys Glu Glu Ala Asn Phe Phe Ile His Arg
        35                  40                  45
Arg Leu Leu Tyr Asn Arg Phe Asp Leu Glu Leu Phe Thr Pro Gly Asn
    50                  55                  60
Leu Glu Arg Glu Cys Asn Glu Glu Leu Cys Asn Tyr Glu Glu Ala Arg
 65                  70                  75                  80
Glu Ile Phe Val Asp Glu Asp Lys Thr Ile Ala Phe Trp Gln Glu Tyr
                 85                  90                  95
Ser Ala Lys Gly Pro Thr Thr Lys Ser Asp Gly Asn Arg Glu Lys Ile
            100                 105                 110
Asp Val Met Gly Leu Leu Thr Gly Leu Ile Ala Ala Gly Val Phe Leu
        115                 120                 125
Val Ile Phe Gly Leu Leu Gly Tyr Tyr Leu Cys Ile Thr Lys Cys Asn
    130                 135                 140
Arg Leu Gln His Pro Cys Ser Ser Ala Val Tyr
145                 150                 155


     &lt;210&gt; 1944
     &lt;211&gt; 61
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens


     &lt;400&gt; 1944
Met Cys Gln His Val Gln Leu Ile Phe Val Phe Phe Val Glu Thr Gly
  1               5                  10                  15
Phe His His Val Ala Gln Ala Gly Leu Lys Leu Leu Gly Ser Ser Asp
            20                  25                  30
Leu Pro Thr Ser Ala Ser Gln Ser Ala Gly Ile Lys Gly Ile Ser His
        35                  40                  45
His Val Gln Leu Lys Phe Leu Ile Ile Asn Asn Phe  *
    50                  55                  60


     &lt;210&gt; 1945
     &lt;211&gt; 79
     &lt;212&gt; PRT
     &lt;213&gt; Homo sapiens
```

<400> 1945
Met Gln Leu Ile Leu Trp Leu Pro Trp Tyr Val Asp Gln Thr Phe Cys
1 5 10 15
His Ser Val Leu Gln Cys Cys Cys Pro Gly Gln Leu Cys Gln Ser Phe
20 25 30
His Ser Asn Arg Asn Asp Ala Arg Leu Leu Gly Ala Lys Gln Ser Ile
35 40 45
Met Arg Arg Lys Arg Trp Leu Glu Pro Ser Val Arg Glu Cys Ala Pro
50 55 60
Gly Met Ile Leu Tyr Lys Ile Gln Ser Tyr Leu Lys Ile Gln *
65 70 75 78

<210> 1946
<211> 72
<212> PRT
<213> Homo sapiens

<400> 1946
Met Leu Arg Trp Gly Phe Leu Glu Ile Leu Phe Leu Arg Ser Trp Phe
1 5 10 15
His Ser Trp Ile Cys Leu Leu Pro Thr Pro Gln Leu Pro Pro Asn Gly
20 25 30
Ala Ser Ala Gly Ser Gln Asp Glu Gly Ser Arg Arg Arg Leu Ser Leu
35 40 45
Glu Val Arg Gly Leu Met Asn His Val Pro Asn Leu Cys Val Ala Phe
50 55 60
Leu Ser Ile Val Ser Ile Ser *
65 70 71

<210> 1947
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1947
Met Trp Asn Val Ala Phe Leu Phe Gln Trp Phe Leu Ser Leu Lys Lys
1 5 10 15
Glu Gly Arg Ser Ser Val Glu Thr Lys Asp Arg Arg Ser Val Arg Asp
20 25 30
Leu Trp Gly Met Pro Lys Lys Met Val Ser Phe Gly Gly Glu Trp Leu
35 40 45
Arg Glu Gly Leu Arg Glu Val *
50 55

<210> 1948
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1948
Met Ser Leu Leu Leu Pro Pro Leu Ala Leu Leu Leu Leu Leu Ala Ala
1 5 10 15
Leu Val Ala Pro Ala Thr Ala Ala Thr Ala Tyr Arg Pro Asp Trp Asn
20 25 30
Arg Leu Ser Gly Leu Thr Arg Ala Arg Val Glu Thr Cys Gly Gly *
35 40 45 47

<210> 1949
<211> 136
<212> PRT
<213> Homo sapiens

<400> 1949
Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Leu Gly Gly Ala Leu Ala
1 5 10 15
His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp Pro Pro
20 25 30
Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro Leu Val Arg
35 40 45
Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu Ile Leu Gly Ser
50 55 60
Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys Leu His Leu Ala Cys
65 70 75 80
Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro Leu Gln Pro Leu Ile Ser
85 90 95
Leu Cys Glu Ala Pro Pro Ser Pro Leu Gln Leu Pro Gly Gly Asn Val
100 105 110
Thr Ile Thr Tyr Ser Tyr Ala Gly Ala Lys Arg Pro Gln Gly His Gly
115 120 125
Phe Phe Cys Phe Leu Lys Ala Lys
130 135 136

<210> 1950
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1950
Met Trp Ile Tyr Phe Trp Thr Leu Asn Ser Val Pro Val Ile Tyr Met
1 5 10 15
Ser Thr Leu Met Ser Ile Pro His Tyr Phe Asp Tyr Cys Cys Phe Ile
20 25 30
Val Ser Asp Ile Met Leu Pro Glu Ile Thr Phe Ser Thr Phe Ile Leu
35 40 45
Leu Leu Met Val Ala Leu Ala Ile Arg Gly Pro Leu His Phe Arg Arg
50 55 60
His Phe Arg Ile Asn Leu Ser Ile Ala Thr Lys Asn Ala *
65 70 75 77

<210> 1951

<211> 89
<212> PRT
<213> Homo sapiens

<400> 1951
Met Val Cys Gly Ala Leu Met Trp Ile Met Leu Ile Leu Val Gly Leu
1 5 10 15
Gly Phe Pro Phe Ile Met Glu Ala Leu Ser His Phe Leu Tyr Val Pro
20 25 30
Phe Leu Gly Val Cys Val Cys Gly Ala Ile Tyr Thr Gly Leu Phe Leu
35 40 45
Pro Glu Thr Lys Gly Lys Thr Phe Gln Glu Ile Ser Lys Glu Leu His
50 55 60
Arg Leu Asn Phe Pro Arg Arg Ala Gln Gly Pro Thr Trp Arg Ser Leu
65 70 75 80
Glu Val Ile Gln Ser Thr Glu Leu *
85 88

<210> 1952
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1952
Met Thr Thr Ala Leu Ser Phe Met Val Ile Thr Val Leu Trp Val Leu
1 5 10 15
Leu Leu His Leu Leu Ala Asn Ile Cys Ile Pro Arg Lys Cys Ser Phe
20 25 30
Val Cys Phe Tyr Ile Asn Gly Ile Leu Leu His Ala Val Phe *
35 40 45 46

<210> 1953
<211> 56
<212> PRT
<213> Homo sapiens

<400> 1953
Met Lys Asn Leu Arg Leu Gly Glu Val Val Thr Leu Ser Trp Val Leu
1 5 10 15
Val Val Glu Leu Glu Val Lys Ala Lys Ser Val Phe Leu Leu Ala Ile
20 25 30
Leu Thr Thr Glu Phe Ser Leu Asn Gln Ser Leu Lys Met Phe Leu Gly
35 40 45
Gln Glu Trp Trp Phe Thr Leu *
50 55

<210> 1954
<211> 425
<212> PRT
<213> Homo sapiens

```
    <400> 1954
Met Thr Leu Arg Pro Gly Thr Met Arg Leu Ala Cys Met Phe Ser Ser
 1               5                  10                  15
Ile Leu Leu Phe Gly Ala Ala Gly Leu Leu Leu Phe Ile Ser Leu Gln
            20                  25                  30
Asp Pro Thr Glu Leu Ala Pro Gln Gln Val Pro Gly Ile Lys Phe Asn
        35                  40                  45
Ile Arg Pro Arg Gln Pro His His Asp Leu Pro Pro Gly Gly Ser Gln
    50                  55                  60
Asp Gly Asp Leu Lys Glu Pro Thr Glu Arg Val Thr Arg Asp Leu Ser
65                  70                  75                  80
Ser Gly Ala Pro Arg Gly Arg Asn Leu Pro Ala Pro Asp Gln Pro Gln
                85                  90                  95
Pro Pro Leu Gln Arg Gly Thr Arg Leu Arg Leu Arg Gln Arg Arg Arg
            100                 105                 110
Arg Leu Leu Ile Lys Lys Met Pro Ala Ala Ala Thr Ile Pro Ala Asn
        115                 120                 125
Ser Ser Asp Ala Pro Phe Ile Arg Pro Gly Pro Gly Thr Leu Asp Gly
    130                 135                 140
Arg Trp Val Ser Leu His Arg Ser Gln Gln Glu Arg Lys Arg Val Met
145                 150                 155                 160
Gln Glu Ala Cys Ala Lys Tyr Arg Ala Ser Ser Ser Arg Arg Ala Val
                165                 170                 175
Thr Pro Arg His Val Ser Arg Ile Phe Val Glu Asp Arg His Arg Val
            180                 185                 190
Leu Tyr Cys Glu Val Pro Lys Ala Gly Cys Ser Asn Trp Lys Arg Val
        195                 200                 205
Leu Met Val Leu Ala Gly Leu Ala Ser Ser Thr Ala Asp Ile Gln His
    210                 215                 220
Asn Thr Val His Tyr Gly Ser Ala Leu Lys Arg Leu Asp Thr Phe Asp
225                 230                 235                 240
Arg Gln Gly Ile Leu His Arg Leu Ser Thr Tyr Thr Lys Met Leu Phe
                245                 250                 255
Val Arg Glu Pro Phe Glu Arg Leu Val Ser Ala Phe Arg Asp Lys Phe
            260                 265                 270
Glu His Pro Asn Ser Tyr Tyr His Pro Val Phe Gly Lys Ala Ile Leu
        275                 280                 285
Ala Arg Tyr Arg Ala Asn Ala Ser Arg Glu Ala Leu Arg Thr Gly Ser
    290                 295                 300
Gly Val Arg Phe Pro Glu Phe Val Gln Tyr Leu Leu Asp Val His Arg
305                 310                 315                 320
Pro Val Gly Met Asp Ile His Trp Asp His Val Ser Arg Leu Cys Ser
                325                 330                 335
Pro Cys Leu Ile Asp Tyr Asp Phe Val Gly Lys Phe Glu Ser Met Glu
            340                 345                 350
Asp Asp Ala Asn Phe Phe Leu Ser Leu Ile Arg Ala Pro Arg Asn Leu
        355                 360                 365
Thr Phe Pro Arg Phe Lys Asp Arg His Ser Gln Glu Ala Arg Thr Thr
    370                 375                 380
Ala Arg Ile Ala His Gln Tyr Phe Ala Gln Leu Ser Ala Leu Gln Arg
385                 390                 395                 400
Gln Arg Thr Tyr Asp Phe Tyr Tyr Met Asp Tyr Leu Met Phe Asn Tyr
                405                 410                 415
Ser Lys Pro Phe Ala Asp Leu Tyr  *
            420             424
```

<210> 1955
<211> 106
<212> PRT
<213> Homo sapiens

<400> 1955
Met Val Cys Phe Leu Phe Ile Thr Pro Leu Ala Ala Ile Ser Gly Trp
1 5 10 15
Leu Cys Leu Arg Gly Ala Gln Asp His Leu Arg Leu His Ser Gln Leu
20 25 30
Glu Ala Val Gly Leu Ile Ala Leu Thr Ile Ala Leu Phe Thr Ile Tyr
35 40 45
Val Leu Trp Thr Leu Val Ser Phe Arg Tyr His Cys Gln Leu Tyr Ser
50 55 60
Glu Trp Arg Lys Thr Asn Gln Lys Val Arg Leu Lys Ile Arg Glu Ala
65 70 75 80
Asp Ser Pro Glu Gly Pro Gln His Ser Pro Leu Ala Ala Gly Leu Leu
85 90 95
Lys Lys Val Ala Glu Glu Thr Pro Val *
100 105

<210> 1956
<211> 139
<212> PRT
<213> Homo sapiens

<400> 1956
Met Val Leu Pro Phe Ile Cys Asn Leu Leu Arg Arg His Pro Ala Cys
1 5 10 15
Arg Val Leu Val His Arg Pro His Gly Pro Glu Leu Asp Ala Asp Pro
20 25 30
Tyr Asp Pro Gly Glu Glu Asp Pro Ala Gln Ser Arg Ala Leu Glu Ser
35 40 45
Ser Leu Trp Glu Leu Gln Ala Leu Gln Arg His Tyr His Pro Glu Val
50 55 60
Ser Lys Ala Ala Ser Val Ile Asn Gln Ala Leu Ser Met Pro Glu Val
65 70 75 80
Ser Ile Ala Pro Leu Leu Glu Leu Thr Ala Tyr Glu Ile Phe Glu Arg
85 90 95
Asp Leu Lys Lys Lys Gly Pro Glu Pro Val Pro Thr Gly Val Leu Ser
100 105 110
Gln Pro Arg Ala Cys Trp Asp Gly Arg Val Lys Leu Cys Ala Gln His
115 120 125
Phe His Ala Gln Leu Thr Leu Ala His Leu *
130 135 138

<210> 1957
<211> 87
<212> PRT
<213> Homo sapiens

<400> 1957
Met Ala Ala Pro Trp Arg Arg Trp Pro Thr Gly Leu Leu Ala Val Leu
1 5 10 15
Arg Pro Leu Leu Thr Cys Arg Pro Leu Gln Gly Thr Thr Leu Gln Arg
20 25 30
Asp Gly Leu Leu Phe Glu His Asp Arg Gly Arg Phe Phe Thr Ile Leu
35 40 45
Gly Leu Val Cys Ala Gly Gln Gly Gly Phe Trp Ala Ser Met Ala Gly
50 55 60
Ala Gly Ala Leu Arg Thr Pro Gly Pro Leu Gln Gly Met Asn Val Glu
65 70 75 80
Arg His Glu Leu Leu Phe *
85 86

<210> 1958
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1958
Met Thr Tyr Phe Ser Gly Leu Leu Val Ile Leu Ala Phe Ala Ala Trp
1 5 10 15
Val Ala Leu Ala Glu Gly Leu Gly Val Ala Glu Tyr Ala Pro Ala Ala
20 25 30
Leu Pro Cys Ala Ala Cys Ala Thr Ile Leu Leu Ser Ser Val Ala *
35 40 45 47

<210> 1959
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1959
Met Trp Ser Leu Ile Gln Thr Leu Gln Ile Leu Pro Gly Ser Leu Ser
1 5 10 15
Ile Leu Leu Cys Ser Ser Ala Gly Trp Lys Asp Cys Gln Ser Ala Leu
20 25 30
Trp Leu Asn His Val Phe Arg Arg Ala Trp Trp Leu Leu Pro Val Ile
35 40 45
Leu Ala Leu Trp Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Arg Ser
50 55 60 64
*

<210> 1960
<211> 78
<212> PRT
<213> Homo sapiens

<400> 1960

```
Met Ser Tyr Val Arg His Val Leu Ser Cys Leu Gly Gly Gly Leu Ala
 1               5                  10                  15
Leu Trp Arg Ala Gly Gln Trp Leu Trp Ala Gln Arg Leu Gly His Cys
            20                  25                  30
His Thr Tyr Trp Ala Val Ser Glu Glu Leu Leu Pro Asn Ser Gly His
        35                  40                  45
Gly Pro Asp Gly Glu Val Pro Lys Asp Lys Glu Gly Gly Val Phe Asp
    50                  55                  60
Leu Gly Pro Phe Ile Val Gly Phe Trp Gly Pro Gln Ile  *
65                  70                  75      77
```

<210> 1961
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1961

```
Met Trp Tyr Gly Val Phe Leu Trp Ala Leu Val Ser Ser Leu Phe Phe
 1               5                  10                  15
His Val Pro Ala Gly Leu Leu Ala Leu Phe Thr Leu Arg His His Lys
            20                  25                  30
Tyr Gly Ala Ala Ile Ala Gly Val Tyr Arg Ala Ala Gly Lys Glu Met
        35                  40                  45
Ile Pro Phe Glu Ala Leu Thr Leu Gly Thr Gly Gln Thr Phe Cys Val
    50                  55                  60
Leu Val Val Ser Phe Leu Arg Ile Leu Ala Thr Leu  *
65                  70                  75  76
```

<210> 1962
<211> 65
<212> PRT
<213> Homo sapiens

<400> 1962

```
Met Phe Ser Ala Val Phe Pro Ala Val Ser Cys Gln Ile Ser Leu Leu
 1               5                  10                  15
Ser Thr Cys Asn Ser Leu Gln His Phe Pro Tyr Ala Gly Val Leu Cys
            20                  25                  30
Phe Arg Pro Val Leu Cys Leu Cys Pro Gly Gln Asp Phe Cys Gly Asn
        35                  40                  45
Val Arg Cys Gln Trp Arg Leu Leu Ala Gly Val Asp Val Ser Asp Val
    50                  55                  60                  64
 *
```

<210> 1963
<211> 53
<212> PRT
<213> Homo sapiens

<221> misc_feature

<222> (1)...(53)
<223> Xaa = any amino acid or nothing

<400> 1963
Met Thr Cys Pro Leu His Thr Thr Pro Phe Pro Phe Ser Leu Pro Cys
1 5 10 15
Leu Pro Thr Phe Phe Leu Asp Phe Pro Ser Cys Ser Leu Ser Ser Cys
20 25 30
Leu Pro Ile Cys Phe Pro Phe Leu Ser Leu Xaa Gln Ile Leu His Ile
35 40 45
Val Ala Leu Leu Ile
50 53

<210> 1964
<211> 232
<212> PRT
<213> Homo sapiens

<400> 1964
Met Pro Ser Val His Arg Leu Leu Gly Pro Gln Pro Val Pro Ser Arg
1 5 10 15
Arg Leu Arg Leu Ala Leu Ala Leu Leu Leu Ser Leu Gln Val Val Val
20 25 30
Phe Phe Leu Val Val Leu Gly Gln Gly Arg Leu Leu Gln Pro Cys Arg
35 40 45
Gly Cys Leu Glu Leu Pro Gly Gly Pro Gly Glu Ala Glu Asp His Gly
50 55 60
Asp Leu Gly Gln Gly Trp Val Gly Leu Leu Gln Ala Leu Asp Pro Leu
65 70 75 80
Ser His Arg Arg Leu Val Met Ser Thr Arg His Ala His Gly Glu Asp
85 90 95
Arg Ala Phe Leu His Phe Ile Asp Val Lys Leu Val Val Val Pro Ala
100 105 110
Thr Pro His Ile Leu Gln Val Gln Leu His Arg Val Val Glu Val Pro
115 120 125
Leu Leu Arg Arg Leu Phe His Phe Pro Leu Leu Arg Gly Gln Gln Val
130 135 140
Ser Ser Glu Asp Val Val Ile His Thr Leu Val Ala Glu Pro Gln Gly
145 150 155 160
Glu Gly Ala Leu Asn Lys Asp Arg Pro Gly Trp Ile Val Ala Gly Gln
165 170 175
Gly Gly Leu Leu Ile Gly Thr Leu Asp Ser Trp Cys Gly Asp Ile His
180 185 190
Ala Leu Cys Pro Thr Met Trp Gly Trp Gly Gly Ser Ala Ala Pro Val
195 200 205
Glu Ser Leu Gly Lys Gly Thr Ser Gly Glu Gly Asp Gly Arg Arg Gln
210 215 220
Gly Gln Arg Thr Gly Pro Gly *
225 230 231

<210> 1965
<211> 253
<212> PRT

<213> Homo sapiens

<400> 1965
Met Gly Cys Ala Ile Ile Ala Gly Phe Leu His Tyr Leu Phe Leu Ala
1 5 10 15
Cys Phe Phe Trp Met Leu Val Glu Ala Val Ile Leu Phe Leu Met Val
20 25 30
Arg Asn Leu Lys Val Val Asn Tyr Phe Ser Ser Arg Asn Ile Lys Met
35 40 45
Leu His Ile Cys Ala Phe Gly Tyr Gly Leu Pro Met Leu Val Val Val
50 55 60
Ile Ser Ala Ser Val Gln Pro Gln Gly Tyr Gly Met His Asn Arg Cys
65 70 75 80
Trp Leu Asn Thr Glu Thr Gly Phe Ile Trp Ser Phe Leu Gly Pro Val
85 90 95
Cys Thr Val Ile Val Ile Asn Ser Leu Leu Leu Thr Trp Thr Leu Trp
100 105 110
Ile Leu Arg Gln Arg Leu Ser Ser Val Asn Ala Glu Val Ser Thr Leu
115 120 125
Lys Asp Thr Arg Leu Leu Thr Phe Lys Ala Phe Ala Gln Leu Phe Ile
130 135 140
Leu Gly Cys Ser Trp Val Leu Gly Ile Phe Gln Ile Gly Pro Val Ala
145 150 155 160
Gly Val Met Ala Tyr Leu Phe His His His Gln Gln Pro Ala Gly Gly
165 170 175
Leu His Leu Pro His Pro Leu Ser Ala Gln Arg Pro Gly Thr Arg Arg
180 185 190
Ile Gln Glu Val Asp His Trp Glu Asp Glu Ala Gln Leu Pro Val Pro
195 200 205
Asp Leu Lys Asp Leu Ala Val Leu His Ala Ile Arg Phe Gln Asp Gly
210 215 220
Leu Lys Ser Phe Leu Ala Phe Lys Tyr Ala Met Glu Pro Thr Val Gly
225 230 235 240
Gly Thr Ser Ser Phe Pro Cys Arg Glu Pro Tyr Pro *
245 250 252

<210> 1966
<211> 649
<212> PRT
<213> Homo sapiens

<400> 1966
Met Val Thr Cys Phe Ile Ile Gly Leu Leu Phe Pro Val Phe Ser Val
1 5 10 15
Cys Tyr Leu Ile Ala Pro Lys Ser Pro Leu Gly Leu Phe Ile Arg Lys
20 25 30
Pro Phe Ile Lys Phe Ile Cys His Thr Ala Ser Tyr Leu Thr Phe Leu
35 40 45
Phe Leu Leu Leu Leu Ala Ser Gln His Ile Asp Arg Ser Asp Leu Asn
50 55 60
Arg Gln Gly Pro Pro Pro Thr Ile Val Glu Trp Met Ile Leu Pro Trp
65 70 75 80
Val Leu Gly Phe Ile Trp Gly Glu Ile Lys Gln Met Trp Asp Gly Gly
85 90 95
Leu Gln Asp Tyr Ile His Asp Trp Trp Asn Leu Met Asp Phe Val Met

```
                100                     105                     110
Asn Ser Leu Tyr Leu Ala Thr Ile Ser Leu Lys Ile Val Ala Phe Val
            115                     120                     125
Lys Tyr Ser Ala Leu Asn Pro Arg Glu Ser Trp Asp Met Trp His Pro
    130                     135                     140
Thr Leu Val Ala Glu Ala Leu Phe Ala Ile Ala Asn Ile Phe Ser Ser
145                     150                     155                     160
Leu Arg Leu Ile Ser Leu Phe Thr Ala Asn Ser His Leu Gly Pro Leu
                    165                     170                     175
Gln Ile Ser Leu Gly Arg Met Leu Leu Asp Ile Leu Lys Phe Leu Phe
                180                     185                     190
Ile Tyr Cys Leu Val Leu Leu Ala Phe Ala Asn Gly Leu Asn Gln Leu
            195                     200                     205
Tyr Phe Tyr Tyr Glu Glu Thr Lys Gly Leu Thr Cys Lys Gly Ile Arg
    210                     215                     220
Cys Glu Lys Gln Asn Asn Ala Phe Ser Thr Leu Phe Glu Thr Leu Gln
225                     230                     235                     240
Ser Leu Phe Trp Ser Ile Phe Gly Leu Ile Asn Leu Tyr Val Thr Asn
                    245                     250                     255
Val Lys Ala Gln His Glu Phe Thr Glu Phe Val Gly Ala Thr Met Phe
                260                     265                     270
Gly Thr Tyr Asn Asp Ile Ser Leu Val Val Leu Leu Asn Met Leu Ile
            275                     280                     285
Ala Met Met Asn Asn Ser Tyr Gln Leu Ile Ala Asp His Ala Asp Ile
    290                     295                     300
Glu Trp Lys Phe Ala Arg Thr Lys Leu Trp Met Ser Tyr Phe Glu Glu
305                     310                     315                     320
Gly Gly Thr Leu Pro Thr Pro Phe Asn Val Ile Pro Ser Pro Lys Ser
                    325                     330                     335
Leu Trp Tyr Leu Ile Lys Trp Ile Trp Thr His Leu Cys Lys Lys Lys
                340                     345                     350
Met Arg Arg Lys Pro Glu Ser Phe Gly Thr Ile Gly Arg Arg Ala Ala
            355                     360                     365
Asp Asn Leu Arg Arg His His Gln Tyr Gln Glu Val Met Arg Asn Leu
    370                     375                     380
Val Lys Arg Tyr Val Ala Ala Met Ile Arg Asp Ala Lys Thr Glu Glu
385                     390                     395                     400
Gly Leu Thr Glu Glu Asn Phe Lys Glu Leu Lys Gln Asp Ile Ser Ser
                    405                     410                     415
Phe Arg Phe Glu Val Leu Gly Leu Leu Arg Gly Ser Lys Leu Ser Thr
                420                     425                     430
Ile Gln Ser Ala Asn Ala Ser Lys Glu Ser Ser Asn Ser Ala Asp Ser
            435                     440                     445
Asp Glu Lys Ser Asp Ser Glu Gly Asn Ser Lys Asp Lys Lys Lys Asn
    450                     455                     460
Phe Ser Leu Phe Asp Leu Thr Thr Leu Ile His Pro Arg Ser Ala Ala
465                     470                     475                     480
Ile Ala Ser Glu Arg His Asn Ile Ser Asn Gly Ser Ala Leu Val Val
                    485                     490                     495
Gln Glu Pro Pro Arg Glu Lys Gln Arg Lys Val Asn Phe Val Thr Asp
                500                     505                     510
Ile Lys Asn Phe Gly Leu Phe His Arg Arg Ser Lys Gln Asn Ala Ala
            515                     520                     525
Glu Gln Asn Ala Asn Gln Ile Phe Ser Val Ser Glu Glu Val Ala Arg
    530                     535                     540
Gln Gln Ala Ala Gly Pro Leu Glu Arg Asn Ile Gln Leu Glu Ser Arg
545                     550                     555                     560
Gly Leu Ala Ser Arg Gly Asp Leu Ser Ile Pro Gly Leu Ser Glu Gln
                    565                     570                     575
```

```
Cys Val Leu Val Asp His Arg Glu Arg Asn Thr Asp Thr Leu Gly Leu
            580                 585                 590
Gln Val Gly Lys Arg Val Cys Pro Phe Lys Ser Glu Lys Val Val Val
        595                 600                 605
Glu Asp Thr Val Pro Ile Ile Pro Lys Glu Lys His Ala Lys Glu Glu
    610                 615                 620
Asp Ser Ser Ile Asp Tyr Asp Leu Asn Leu Pro Asp Thr Val Thr His
625                 630                 635                 640
Glu Asp Tyr Val Thr Thr Arg Leu  *
                645         648
```

<210> 1967
<211> 80
<212> PRT
<213> Homo sapiens

<400> 1967

```
Met Thr Gly Thr His Gln Tyr Ala Trp Val Ile Phe Val Phe Leu Ser
  1               5                  10                  15
Thr Tyr Arg Ile Ser Pro Cys Trp Pro Gly Trp Phe Gln Thr Pro Gly
            20                  25                  30
Leu Arg Trp Ser Ala Cys Leu Gly Leu Pro Gly Cys Trp Asp Cys Arg
        35                  40                  45
Arg Glu Pro Leu Gly Pro Ala Cys Ile Phe Tyr Gln Pro Gln Ile Gln
    50                  55                  60
Gln Gln Ala Glu Asp Ser Ala His Lys Thr Gly Leu Val Ser Trp  *
 65                  70                  75                  79
```

<210> 1968
<211> 49
<212> PRT
<213> Homo sapiens

<400> 1968

```
Met Thr Tyr Ile Leu Val Tyr Lys Leu Gly Ser Ile Leu Leu Ser Phe
  1               5                  10                  15
Phe Leu Ile Cys Phe Glu Glu Phe Ser Ser Glu Asn Ser Gly Pro Gly
            20                  25                  30
Ile Phe Phe Val Glu Arg Val Leu Ile Leu Asn Leu Ile Ser Leu Ile
        35                  40                  45          48
 *
```

<210> 1969
<211> 150
<212> PRT
<213> Homo sapiens

<400> 1969

```
Met His Val His Phe Trp Leu Val Thr Ala Ser Phe Ser Ser Ser Val
```

```
 1               5                   10                  15
Ala Trp Thr Thr Ala Glu Ile Thr Gly Gly Val Ser Gly Val Ala Ala
            20                  25                  30
Gly Val Gly Ser Trp Glu Gly Gly Ser Glu Arg Gly Asp Arg Phe Gly
        35                  40                  45
Asp Phe Phe Thr Leu Asn Val Ser Val Phe Arg Gly Val Phe Phe Phe
    50                  55                  60
Leu Ala Gly Leu Phe Ser Pro Ser Pro Ser Thr Pro Leu Ala Ser Ile
65                  70                  75                  80
Ala Leu Ala Gly Ile Ser Lys Glu Ala Gly Asp Leu Glu Gly Glu Leu
                85                  90                  95
Gly Val Leu Glu Asp Val Leu Lys Gly Ser Thr Asp Ser Ser Gln Val
            100                 105                 110
Ser Gly Ser Lys Leu Tyr Asp Cys Trp Gly Ser Leu Gly Asp Ser Cys
        115                 120                 125
Ile Phe Glu Val Glu Glu Lys Gly Leu Lys Leu Gly Ser Ser His Leu
    130                 135                 140
Ser Ile Ser Lys Val  *
145             149
```

<210> 1970
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1970

```
Met Phe Gly Ser Arg Gly Leu Leu Cys Met Cys Val Phe Phe Phe Asn
 1               5                   10                  15
Ile Leu Ala Ser Gln Cys Lys Val Ile Ser Ser Gly Gly Met Leu Cys
            20                  25                  30
Cys Arg Thr Pro Thr Leu Leu Asp Tyr Leu Arg Gln His Phe Leu  *
        35                  40                  45      47
```

<210> 1971
<211> 64
<212> PRT
<213> Homo sapiens

<400> 1971

```
Met Leu Ile Phe Thr Val Leu Glu Leu Leu Leu Ala Ala Tyr Ser Ser
 1               5                   10                  15
Val Phe Trp Trp Lys Gln Leu Tyr Ser Asn Asn Pro Gly Val Ser Met
            20                  25                  30
Leu Thr Cys Arg Leu Ile Pro Ala Val Ser Gln Val Gln Ala Thr Ile
        35                  40                  45
Ile Gln Pro Gln Lys Val Ala Lys Arg Arg Ile Asn Tyr Cys Ser  *
    50                  55                  60          63
```

<210> 1972
<211> 211
<212> PRT

<213> Homo sapiens

<221> misc_feature
<222> (1)...(211)
<223> Xaa = any amino acid or nothing

<400> 1972

```
Met Thr Arg Met Leu Asn Met Leu Ile Val Phe Arg Phe Leu Arg Ile
 1               5                  10                  15
Ile Pro Ser Met Lys Pro Met Ala Val Val Ala Ser Thr Val Leu Gly
            20                  25                  30
Leu Val Gln Asn Met Arg Ala Phe Gly Gly Ile Leu Val Val Val Tyr
        35                  40                  45
Tyr Val Phe Ala Ile Ile Gly Ile Asn Leu Phe Arg Gly Val Ile Val
    50                  55                  60
Ala Leu Pro Gly Asn Ser Ser Leu Ala Pro Ala Asn Gly Ser Ala Pro
65                  70                  75                  80
Cys Gly Ser Phe Glu Gln Leu Glu Tyr Trp Ala Asn Asn Phe Asp Asp
                85                  90                  95
Phe Xaa Ala Ala Leu Val Thr Leu Trp Asn Leu Met Val Val Asn Asn
            100                 105                 110
Trp Gln Val Phe Leu Asp Ala Tyr Arg Arg Tyr Ser Gly Pro Trp Ser
        115                 120                 125
Lys Ile Tyr Phe Val Leu Trp Trp Leu Val Ser Ser Val Ile Trp Val
    130                 135                 140
Asn Leu Phe Leu Ala Leu Ile Leu Glu Asn Phe Leu His Lys Trp Asp
145                 150                 155                 160
Pro Arg Ser His Leu Gln Pro Leu Ala Gly Thr Pro Glu Ala Thr Tyr
                165                 170                 175
Gln Met Thr Val Glu Leu Leu Phe Arg Asp Ile Leu Glu Glu Pro Gly
            180                 185                 190
Glu Asp Glu Leu Thr Glu Arg Leu Ser Gln His Pro His Leu Trp Leu
        195                 200                 205
Cys Arg  *
    210
```

<210> 1973
<211> 53
<212> PRT
<213> Homo sapiens

<400> 1973

```
Met Ile Gln Tyr Ala Val Phe Val Leu Cys Gly Phe Leu Tyr Leu Cys
 1               5                  10                  15
Phe Met Leu Phe Phe Phe Ser Ser Val Thr Gln Ala Gly Val Ser Glu
            20                  25                  30
Pro Arg Ser Ser His Cys Thr Pro Ala Trp Ala Thr Glu Arg Asp Cys
        35                  40                  45
Val Ser Asn Lys  *
    50      52
```

<210> 1974
<211> 50

<212> PRT
<213> Homo sapiens

<400> 1974

```
Met Gly Val Thr Thr Ala Thr Leu Ile Ala Pro Ala Leu Arg Thr Leu
  1               5                  10                  15
Arg Thr Ser Ala Val Cys Ser Thr Thr Ala Glu Thr Ser Phe Ser Ala
             20                  25                  30
Cys Thr Phe Val Ser Thr Ser Cys Ser Lys Lys Gly Thr Pro Arg Phe
         35                  40                  45
Ser  *
 49
```

<210> 1975
<211> 87
<212> PRT
<213> Homo sapiens

<400> 1975

```
Met Cys Ser Ser Pro Ala Val Leu Leu Cys Ala Leu Val Val Gly Cys
  1               5                  10                  15
Pro Val Gly Phe Pro His Glu Ala Asp Pro Gly Ser Met Gln Arg Ala
             20                  25                  30
Ser Ser Leu Gly Leu His Gln Ala Ser Val Val Ser Ala Gly Trp Leu
         35                  40                  45
Gly Gln Ala Arg His Gly Ala His Leu Gly Cys Ser Leu Leu Pro Ser
     50                  55                  60
Gly Val His Gly Leu Trp Arg Pro Ser Val Gln Pro Arg Arg Asp Pro
 65                  70                  75                  80
Val Thr Glu Leu Gln Cys  *
                 85  86
```

<210> 1976
<211> 107
<212> PRT
<213> Homo sapiens

<400> 1976

```
Met Ala Leu Tyr Glu Leu Phe Ser His Pro Val Glu Arg Ser Tyr Arg
  1               5                  10                  15
Ala Gly Leu Cys Ser Lys Ala Ala Leu Phe Leu Leu Leu Ala Ala Ala
             20                  25                  30
Leu Thr Tyr Ile Pro Pro Leu Leu Val Ala Phe Arg Ser His Gly Phe
         35                  40                  45
Trp Leu Lys Arg Ser Ser Tyr Glu Glu Gln Pro Thr Val Arg Phe Gln
     50                  55                  60
His Gln Val Leu Leu Val Ala Leu Leu Gly Pro Glu Ser Asp Gly Phe
 65                  70                  75                  80
Leu Ala Trp Ser Thr Phe Pro Ala Phe Asn Arg Gln Gln Gly Asp Arg
                 85                  90                  95
Leu Arg Val Pro Leu Val Ser Trp Arg Arg  *
            100                 105 106
```

<210> 1977
<211> 134
<212> PRT
<213> Homo sapiens

<400> 1977
Met Val Thr Val Ala Met Ala Cys Ser Gly Ala Leu Thr Ala Leu Cys
1   5   10   15
Cys Leu Phe Val Ala Met Gly Val Leu Arg Val Pro Trp His Cys Pro
            20   25   30
Leu Leu Leu Val Thr Glu Gly Leu Leu Asp Met Leu Ile Ala Gly Gly
        35   40   45
Tyr Ile Pro Ala Leu Tyr Phe Tyr Phe His Tyr Leu Ser Ala Ala Tyr
    50   55   60
Gly Ser Pro Val Cys Lys Glu Arg Gln Ala Leu Tyr Gln Ser Lys Gly
65   70   75   80
Tyr Ser Gly Phe Gly Cys Ser Phe His Gly Ala Asp Ile Gly Ala Gly
                85   90   95
Ile Phe Ala Ala Leu Gly Ile Val Val Phe Ala Leu Gly Ala Val Leu
            100   105   110
Ala Ile Lys Gly Tyr Arg Lys Val Arg Lys Leu Lys Glu Lys Pro Ala
        115   120   125
Glu Met Phe Glu Phe *
    130   133

<210> 1978
<211> 61
<212> PRT
<213> Homo sapiens

<400> 1978
Met Thr Leu Arg Met Leu Val Pro Arg Leu Leu Leu Thr Arg Gln Leu
1   5   10   15
Val Trp Phe Phe Ser Ala Ala Thr Glu Arg Asp Pro Glu Met Met Asn
            20   25   30
Gly Ile Pro Arg Lys Leu Met Ser Phe Pro Pro Ser Ser Val Thr Ser
        35   40   45
Arg Arg Ser Arg Arg Gly His His Leu Gln Ser Leu *
    50   55   60

<210> 1979
<211> 66
<212> PRT
<213> Homo sapiens

<400> 1979
Met Leu Thr Ala Leu Pro Lys Ser Phe Val Phe Lys Val Val Gly Glu
1   5   10   15
Trp Trp Trp Leu Phe Ile Cys Leu Val Leu Ala Phe Ala Asp Gly Lys

```
              20                       25                       30
Arg His Lys Tyr Ser Tyr Asp Ala Asn Val Phe Leu Gln Val Asn Tyr
        35                       40                       45
Ile Thr Trp Pro Asp Ser Phe Ser Pro Val Pro Ser Leu Pro Pro Ile
    50                       55                       60
Leu  *
 65
```

<210> 1980
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1980
```
Met Asp Thr Pro Arg Ser Thr Val Phe Ser Leu Trp Phe Gly Ile His
  1               5                  10                  15
Lys Ala Ala Gly Ile Phe Gln Val Leu Val Gln Leu Leu Leu Leu Leu
             20                  25                  30
Thr Pro Tyr Pro Arg Tyr Pro Ser Pro Ser Pro Leu Pro Pro Tyr Ser
        35                  40                  45
Tyr Pro  *
    50
```

<210> 1981
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1981
```
Met Met Trp Ala Ala Gly Ala Val Ala Ala Met Ser Ser Ile Thr Phe
  1               5                  10                  15
Pro Ala Val Ser Ala Leu Val Ser Arg Thr Ala Asp Ala Asp Gln Gln
             20                  25                  30
Gly Glu Leu Ile Gly Thr Ser Asp Asn Tyr Leu Lys Val Gln Asn Val
        35                  40                  45
Leu Ile Leu Cys Ser Val Ser Tyr Val Leu Lys His Lys Tyr Ile Phe
    50                  55                  60
Arg Gly Glu Thr Phe Lys Ile Ala Phe Asp Ile Asn Arg Lys Ser
 65                  70                  75                  79
```

<210> 1982
<211> 156
<212> PRT
<213> Homo sapiens

<400> 1982
```
Met His Asn Asn Tyr Thr Ala Leu Leu Gly Val Trp Ile Tyr Gly Phe
  1               5                  10                  15
Phe Val Leu Met Leu Leu Val Leu Asp Leu Leu Tyr Tyr Ser Ala Met
             20                  25                  30
```

Asn Tyr Asp Ile Cys Lys Val Tyr Leu Ala Arg Trp Gly Ile Gln Gly
35 40 45
Arg Trp Met Lys Gln Asp Pro Arg Arg Trp Gly Asn Pro Ala Arg Ala
50 55 60
Pro Arg Pro Gly Gln Arg Ala Pro Gln Pro Gln Pro Pro Pro Gly Pro
65 70 75 80
Leu Pro Gln Ala Pro Gln Ala Val His Thr Leu Arg Gly Asp Ala His
85 90 95
Ser Pro Pro Leu Met Thr Phe Gln Ser Ser Ser Ala Trp Glu Gly Ala
100 105 110
Ser Gln Gln Gln Glu Ile Pro Glu Asn Glu Glu Thr Glu Lys Gly Asp
115 120 125
Asp Gln Ile Ser Ser Phe Leu Gly Val Thr Ser Asn Thr Lys Glu Ala
130 135 140
Ser Val Ile Gly Ile Gln Lys Thr Val Asp Val Leu
145 150 155 156

<210> 1983
<211> 63
<212> PRT
<213> Homo sapiens

<400> 1983
Met Arg Leu Ile Arg Ile Trp Phe Ser Gly Lys Phe Phe Pro Ala Gly
1 5 10 15
Leu His Ser Gln Ser Leu Pro Ser Ile Ser Ala Ala Ile Gly Leu Leu
20 25 30
Met Leu Phe Thr Asn Leu Phe Thr Cys Ser Lys Cys Phe Val Ile Ser
35 40 45
Val Ala Lys Thr Met Ser Ile Ile Ala Trp Arg Ser Val Arg *
50 55 60 62

<210> 1984
<211> 232
<212> PRT
<213> Homo sapiens

<400> 1984
Met Phe His Arg Cys Gly Ile Met Ala Leu Val Ala Ala Tyr Leu Asn
1 5 10 15
Phe Val Ser Gln Met Ile Ala Val Pro Ala Phe Cys Gln His Val Ser
20 25 30
Lys Val Ile Glu Ile Arg Thr Met Glu Ala Pro Tyr Phe Leu Pro Glu
35 40 45
His Ile Phe Arg Asp Lys Cys Met Leu Pro Lys Ser Leu Glu Lys His
50 55 60
Glu Lys Asp Leu Tyr Phe Leu Thr Asn Lys Ile Ala Glu Ser Leu Gly
65 70 75 80
Gly Lys Trp Asp Ile Val Leu Arg Asp Cys Gln Phe Arg Met Leu Pro
85 90 95
Gln Val Thr Asp Glu Asp Arg Leu Ser Arg Arg Lys Ser Ile Val Asp
100 105 110
Thr Val Ser Ile Gln Val Asp Ile Leu Ser Asn Asn Val Pro Ser Asp

```
        115                 120                 125
Asp Val Val Ser Asn Thr Glu Glu Ile Thr Phe Glu Ala Leu Lys Lys
    130                 135                 140
Ala Ile Asp Thr Ser Gly Met Glu Glu Gln Glu Lys Glu Lys Arg Arg
145                 150                 155                 160
Leu Val Ile Glu Lys Phe Gln Lys Ala Pro Phe Glu Glu Ile Ala Ala
                165                 170                 175
Gln Cys Glu Ser Lys Ala Asn Leu Leu His Asp Arg Leu Ala Gln Ile
            180                 185                 190
Leu Glu Leu Thr Ile Arg Pro Pro Pro Ser Pro Ser Gly Thr Leu Thr
        195                 200                 205
Ile Thr Ser Gly His Ala Gln Tyr Gln Ser Val Pro Val Tyr Glu Met
    210                 215                 220
Lys Phe Pro Asp Leu Cys Val Tyr
225                 230     232


     <210> 1985
     <211> 141
     <212> PRT
     <213> Homo sapiens


     <400> 1985
Met Asn Leu Ser Leu Pro Phe Leu Cys Leu Phe Leu Leu Ser Phe Ser
 1               5                  10                  15
Phe Lys Leu Ala Leu Gln Leu Arg Lys Val Ser Leu Leu Ser Leu Arg
            20                  25                  30
Leu Trp Gly Gln Ser Ile Cys Cys Leu Glu Lys Glu Gly Asn Gln Asp
        35                  40                  45
Ser Ser Gly Thr Gln Met Ser Ser Ser Leu Ala Leu Leu Asn Pro Leu
    50                  55                  60
Leu His Asn Trp Ser Phe Ile Leu Ala Leu Asn Asp Pro Ala Gly His
 65                 70                  75                  80
His Gly Phe Leu Phe Leu Leu Val Phe Phe Phe Ser Glu Thr Glu Ser
                85                  90                  95
His Ser Val Thr Gln Ala Gly Val Gln Trp Arg Asp Leu Ser Ser Leu
            100                 105                 110
Gln Pro Leu Pro Pro Gly Phe Lys Arg Phe Phe Cys Leu Ser Leu Pro
        115                 120                 125
Ser Ser Trp Asp Tyr Arg Cys Ala Thr Thr Pro Gly  *
    130                 135                 140


     <210> 1986
     <211> 292
     <212> PRT
     <213> Homo sapiens


     <400> 1986
Met Ile Ser Val Ser Ala Met Ala Ile Ala Phe Leu Thr Leu Gly Tyr
 1               5                  10                  15
Phe Phe Lys Ile Lys Glu Ile Lys Ser Pro Glu Met Ala Glu Asp Trp
            20                  25                  30
Asn Thr Phe Leu Leu Arg Phe Asn Asp Leu Asp Leu Cys Val Ser Glu
        35                  40                  45
```

Asn Glu Thr Leu Lys His Leu Thr Asn Asp Thr Thr Thr Pro Glu Ser
50 55 60
Thr Met Thr Ser Gly Gln Ala Arg Ala Ser Thr Gln Ser Pro Gln Ala
65 70 75 80
Leu Glu Asp Ser Gly Pro Val Asn Ile Ser Val Ser Ile Thr Leu Thr
85 90 95
Leu Asp Pro Leu Lys Pro Phe Gly Gly Tyr Ser Arg Asn Val Thr His
100 105 110
Leu Tyr Ser Thr Ile Leu Gly His Gln Ile Gly Leu Ser Gly Arg Glu
115 120 125
Ala His Glu Glu Ile Asn Ile Thr Phe Thr Leu Pro Thr Ala Trp Ser
130 135 140
Ser Asp Asp Cys Ala Leu His Gly His Cys Glu Gln Val Val Phe Thr
145 150 155 160
Ala Cys Met Thr Leu Thr Ala Ser Pro Gly Val Phe Pro Val Thr Val
165 170 175
Gln Pro Pro His Cys Val Pro Asp Thr Tyr Ser Asn Ala Thr Leu Trp
180 185 190
Tyr Lys Ile Phe Thr Thr Ala Arg Asp Ala Asn Thr Lys Tyr Ala Gln
195 200 205
Asp Tyr Asn Pro Phe Trp Cys Tyr Lys Gly Ala Ile Gly Lys Val Tyr
210 215 220
His Ala Leu Asn Pro Lys Leu Thr Val Ile Val Pro Asp Asp Asp Arg
225 230 235 240
Ser Leu Ile Asn Leu His Leu Met His Thr Ser Tyr Phe Leu Phe Val
245 250 255
Met Val Ile Thr Met Phe Cys Tyr Ala Val Ile Lys Gly Arg Pro Ser
260 265 270
Lys Leu Arg Gln Ser Asn Pro Glu Phe Cys Pro Glu Lys Val Ala Leu
275 280 285
Ala Glu Ala *
290 291

<210> 1987
<211> 186
<212> PRT
<213> Homo sapiens

<400> 1987
Met Ala Gly Pro Arg Pro Arg Trp Arg Asp Gln Leu Leu Phe Met Ser
1 5 10 15
Ile Ile Val Leu Val Ile Val Val Ile Cys Leu Met Leu Tyr Ala Leu
20 25 30
Leu Trp Glu Ala Gly Asn Leu Thr Asp Leu Pro Asn Leu Arg Ile Gly
35 40 45
Phe Tyr Asn Phe Cys Leu Trp Asn Glu Asp Thr Ser Thr Leu Gln Cys
50 55 60
His Gln Phe Pro Glu Leu Glu Ala Leu Gly Val Pro Arg Val Gly Leu
65 70 75 80
Gly Leu Ala Arg Leu Gly Val Tyr Gly Ser Leu Val Leu Thr Leu Phe
85 90 95
Ala Pro Gln Pro Leu Leu Leu Ala Gln Cys Asn Ser Asp Glu Arg Ala
100 105 110
Trp Arg Leu Ala Val Gly Phe Leu Ala Val Ser Ser Val Leu Leu Ala
115 120 125
Gly Gly Leu Gly Leu Phe Leu Ser Tyr Val Trp Lys Trp Val Arg Leu

```
    130                 135                     140
Ser Leu Pro Gly Pro Gly Phe Leu Ala Leu Gly Ser Ala Gln Ala Leu
145                 150                 155                 160
Leu Ile Leu Leu Leu Ile Ala Met Ala Val Phe Pro Leu Arg Ala Glu
                165                 170                 175
Arg Ala Glu Ser Lys Leu Glu Ser Cys  *
            180                 185
```

<210> 1988
<211> 47
<212> PRT
<213> Homo sapiens

<400> 1988

```
Met Phe Asn Leu Lys Glu Ile Pro Leu Ile Leu Tyr Val Leu Leu Ser
 1               5                  10                  15
Val Val Cys Phe Ser Phe Ser Tyr Gly Val Glu Pro Pro Lys Ser Trp
            20                  25                  30
Ser Gln Gly Lys Lys Gly Val Val Thr Gly Asp Ser Leu Leu  *
        35                  40                  45  46
```

<210> 1989
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1989

```
Met Thr Leu Pro Cys Ala Ile Gln Met Phe Ile Ala Ala Val Gln Val
 1               5                  10                  15
Leu Ser Val Thr Tyr Leu Asp Leu Gln Pro His Leu Asn Glu Ser Leu
            20                  25                  30
Leu Thr Val Ser Leu Ile Phe Arg Phe Ile Phe Asn Leu Leu Phe Tyr
        35                  40                  45
Leu Gly Leu Thr Phe Ser Val Thr Lys  *
    50                  55      57
```

<210> 1990
<211> 80
<212> PRT
<213> Homo sapiens

<400> 1990

```
Met Ile Ser Phe Val Leu Val Lys Gly Leu Phe Leu Lys Cys Thr Phe
 1               5                  10                  15
His Phe Pro Leu Phe Asn Arg His Ile Met Ser Cys Ser Phe Leu Arg
            20                  25                  30
Ser Asp Phe Met His Gly Asp Ser Met Cys Phe Ser Ser Ser Tyr Met
        35                  40                  45
Leu Leu Asn Glu Ser Leu Tyr Ile Ser Phe His Thr Met Val Ile Lys
    50                  55                  60
```

Thr His Trp Ala Val Cys Gly Cys Gly Phe Ile Ser Glu Lys Leu *
65 70 75 79

<210> 1991
<211> 48
<212> PRT
<213> Homo sapiens

<400> 1991
Met Val Arg Trp Lys Arg Glu Ile His Glu Leu Leu Trp Pro Leu Trp
1 5 10 15
Phe Cys Ser Trp Pro Arg Val Phe Glu Lys Gln Arg Ser Met Thr Asp
20 25 30
Phe Thr Cys Ser Ala Phe Ser Ala Phe Cys Leu Phe Cys Cys Pro *
35 40 45 47

<210> 1992
<211> 51
<212> PRT
<213> Homo sapiens

<400> 1992
Met Leu Phe Ser Leu Gln Thr Ala Ile Val Tyr Cys Thr Ile Thr Val
1 5 10 15
Leu Cys His Arg Thr Leu Ile Phe Ser Ser Met His Lys Cys Ile Met
20 25 30
Leu Phe Pro Ile Ile His Ile Cys Ser Tyr Val Phe Phe Val Ile Tyr
35 40 45
Ser Phe *
50

<210> 1993
<211> 79
<212> PRT
<213> Homo sapiens

<400> 1993
Met Trp Cys Ala Glu Met Leu His Ile Leu Phe Met Gly Leu Arg Val
1 5 10 15
Asn Leu Asn His Glu Thr Phe Leu Ile Ile Cys Cys Glu Ile Tyr Gln
20 25 30
Ala Trp Met Ile Ser Val Phe Leu Val Val Cys Cys Phe Phe Lys Glu
35 40 45
Val Ile Gln Val Pro Leu Leu Ser Cys Gln His Thr Lys Leu Leu Lys
50 55 60
Lys Leu Thr Ile Ser Phe Arg Ser Asn Ser Gln Pro Val Glu *
65 70 75 78

<210> 1994
<211> 52
<212> PRT
<213> Homo sapiens

<400> 1994

```
Met Thr Ser Leu Gln Lys Arg Leu Leu Ser His Cys Met Gln Cys Thr
 1               5                  10                  15
Met Leu Leu Gly Ile Cys Gly Gln Cys Lys Asp Asp Asp Ile Leu Ala
            20                  25                  30
Ser Trp Val Ile Gln Glu Phe Thr Ala Met Gln Ser Arg Ser Arg Asn
        35                  40                  45
Leu Gln Ser Arg
    50      52
```

<210> 1995
<211> 164
<212> PRT
<213> Homo sapiens

<400> 1995

```
Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Leu Gly Gly Ala Leu Ala
 1               5                  10                  15
His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp Pro Pro
            20                  25                  30
Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro Leu Val Arg
        35                  40                  45
Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu Ile Leu Gly Ser
    50                  55                  60
Lys Glu Arg Thr Val Thr Ile Arg Phe Gln Lys Leu His Leu Ala Cys
 65                 70                  75                  80
Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro Leu Gln Pro Leu Ile Ser
                85                  90                  95
Leu Cys Glu Ala Pro Pro Ser Pro Leu Gln Leu Pro Gly Gly Asn Val
            100                 105                 110
Thr Ile Thr Tyr Ser Tyr Ala Gly Gly Gln Ser Thr His Gly Pro Gly
        115                 120                 125
Leu Pro Ala Leu Leu Gln Ala Ser Pro Ser Pro Trp Cys Leu Cys Arg
    130                 135                 140
Leu Ala Asp Val Leu Ala Arg Arg Gly Ser Met Pro Glu Pro Pro Leu
145                 150                 155                 160
Cys Ile Cys  *
        163
```

<210> 1996
<211> 77
<212> PRT
<213> Homo sapiens

<400> 1996

```
Met Trp Tyr Gly Val Phe Leu Trp Ala Leu Val Ser Ser Leu Phe Phe
 1               5                  10                  15
```

His Val Pro Ala Gly Leu Leu Ala Leu Phe Thr Leu Arg His His Lys
20 25 30
Tyr Gly Ala Ala Ile Ala Gly Val Tyr Arg Ala Ala Gly Lys Glu Met
35 40 45
Ile Pro Phe Glu Ala Leu Thr Leu Gly Thr Gly Gln Thr Phe Cys Val
50 55 60
Leu Val Val Ser Phe Leu Arg Ile Leu Ala Thr Leu *
65 70 75 76

<210> 1997
<211> 233
<212> PRT
<213> Homo sapiens

<400> 1997
Met Gly Leu Pro Gly Leu Phe Cys Leu Ala Val Leu Ala Ala Ser Ser
1 5 10 15
Phe Ser Lys Ala Arg Glu Glu Glu Ile Thr Pro Val Val Ser Ile Ala
20 25 30
Tyr Lys Val Leu Glu Val Phe Pro Lys Gly Arg Trp Val Leu Ile Thr
35 40 45
Cys Cys Ala Pro Gln Pro Pro Pro Pro Ile Thr Tyr Ser Leu Cys Gly
50 55 60
Thr Lys Asn Ile Lys Val Ala Lys Lys Val Val Lys Thr His Glu Pro
65 70 75 80
Ala Ser Phe Asn Leu Asn Val Thr Leu Lys Ser Ser Pro Asp Leu Leu
85 90 95
Thr Tyr Phe Cys Arg Ala Ser Ser Thr Ser Gly Ala His Val Asp Ser
100 105 110
Ala Arg Leu Gln Met His Trp Glu Leu Trp Ser Arg Gln Arg Gly Arg
115 120 125
Pro Gln Gly Gly Asp Asp Leu Pro Gly Val Leu Gly Gln Pro Thr Tyr
130 135 140
His Gln Gln Pro Asp Arg Glu Gly Trp Ala Gly Pro Pro Ala Ala Glu
145 150 155 160
Thr Met Pro Gln Glu Ala Cys Gln Leu Ser Pro Ser Cys Arg Ala Arg
165 170 175
His Arg Thr Trp Phe Trp Cys Gln Ala Cys Lys Gln Arg Gln Cys Ser
180 185 190
Ser Thr Ala Pro Ser Gln Trp Leu Pro Gln Val Val Thr Gln Lys Met
195 200 205
Glu Asp Trp Gln Gly Pro Pro Gly Glu Pro His Pro Cys Leu Ala Ala
210 215 220
Leu Gln Glu His Pro Pro Ser Glu *
225 230 232

<210> 1998
<211> 58
<212> PRT
<213> Homo sapiens

<400> 1998
Met Pro Ala Ile Val Val Phe Leu Phe Cys Phe Val Ile Ser Asp Gly

```
 1               5                   10                  15
Leu Thr Leu Ser Pro Arg Leu Asp Cys Thr Gly Leu Asn Leu Leu Ser
            20                  25                  30
Ser Ser Asp Arg Pro Thr Ser Ala Ser Pro Val Ala Gly Thr Ile Ala
        35                  40                  45
Val Gln His His Ala Trp Leu Ile Phe  *
    50                  55      57
```

<210> 1999
<211> 66
<212> PRT
<213> Homo sapiens

<400> 1999

```
Met Trp Leu Leu Val Thr Leu Ser Pro Arg Leu Leu Leu Ser Pro Ser
 1               5                   10                  15
His Phe Thr Leu Glu Gly Pro Gln Ile Asp Gln Ala His Ser Glu Leu
            20                  25                  30
Gln Val Leu Pro Leu Val Arg Pro Ser Ala Val Pro Leu Leu Gln Arg
        35                  40                  45
Ala Ser Trp Leu Arg Ser Arg Cys Leu His Leu Pro Lys Thr Val Leu
    50                  55                  60
Val  *
65
```

<210> 2000
<211> 106
<212> PRT
<213> Homo sapiens

<400> 2000

```
Met Gly Arg Cys Leu Ser Leu Gly Ile Leu Arg Gln Gly Leu Cys Cys
 1               5                   10                  15
Pro Cys Trp Ser Val Val Ala Glu Ser Gly Leu Thr Ala Ser Leu Gly
            20                  25                  30
Gly Ser Gly His Pro Ala Thr Ser Cys Ser Lys Glu Ala Gly Thr Thr
        35                  40                  45
Gly Glu Cys Met His His Thr Gln Leu Gly Ile Gln Thr Leu Arg Thr
    50                  55                  60
Tyr Tyr Met Pro Asp Ser Val Glu Leu Ser Glu Thr Met Ser Gly Cys
65                  70                  75                  80
Asn Trp Leu Pro Thr Gln Gln Thr Gln Ser Trp Ala Asn Ile Leu Arg
                85                  90                  95
Val Tyr Leu Thr Leu Lys Tyr Arg Phe Ser
            100                 105 106
```

<210> 2001
<211> 88
<212> PRT
<213> Homo sapiens

<400> 2001

```
Met Glu Arg Arg Arg Leu Leu Gly Gly Met Ala Leu Leu Leu Leu Gln
 1               5                  10                  15
Ala Leu Pro Asn Pro Leu Ser Ala Arg Ala Glu Pro Pro Gln Val Arg
            20                  25                  30
Gly Arg Gly Arg Leu Gly His Val Gly Ser Trp Gly Ser Ser Arg Pro
        35                  40                  45
Gly Trp Arg Gly Leu Lys Glu Cys Cys Cys Gln Glu Leu Arg Gly Pro
    50                  55                  60
Glu Arg Gly Val Tyr Ala Trp Arg Gly Gln Asp Leu Lys Gly Arg Arg
65                  70                  75                  80
Tyr Leu Ala Glu Gly His Leu  *
                85      87
```

<210> 2002
<211> 85
<212> PRT
<213> Homo sapiens

<400> 2002

```
Met Arg Lys Leu Ile Ala Gly Leu Ile Phe Leu Lys Ile Trp Thr Cys
 1               5                  10                  15
Thr Val Arg Thr Ser Thr Asp Leu Pro Gln Thr Glu Asp Cys Ser Gln
            20                  25                  30
Cys Ile His Gln Val Thr Glu Ile Gly Gln Lys Val Ala Thr Val Leu
        35                  40                  45
Leu Phe Tyr Gly Tyr Tyr Lys Tyr Thr Gly Thr Leu Lys Arg Thr Cys
    50                  55                  60
Leu Tyr Asn Val Ile Leu Tyr Lys Val Tyr Ser Pro Gly Asn Asp Gln
65                  70                  75                  80
Pro Asp Val Leu  *
            84
```

<210> 2003
<211> 46
<212> PRT
<213> Homo sapiens

<400> 2003

```
Met Ala Phe Ala Ser Val Leu Leu Ala Arg Ala Ser Pro Ala Val Val
 1               5                  10                  15
Arg Ala Cys Leu Ser Arg Cys Ala Tyr Gly Val Gly Ser Asp Cys Pro
            20                  25                  30
His Leu Val Thr Leu Ala Ala Leu Ile Leu Phe Trp Val  *
        35                  40                  45
```

<210> 2004
<211> 51
<212> PRT
<213> Homo sapiens

<400> 2004
Met Trp Leu Phe Ile Ala Ser Lys Cys Ile Phe Leu Leu Ile Val Pro
1   5   10   15
Asn Phe Ile Phe Val Phe Trp Arg Lys Val Phe Ser His Asp Arg Leu
            20   25   30
Asn Ile Ala Tyr Ser Phe Glu Leu Ser Ser Lys Tyr Ile Phe Ile Leu
        35   40   45
Phe Ile *
    50

<210> 2005
<211> 66
<212> PRT
<213> Homo sapiens

<400> 2005
Met Val Glu Val Val Ser Leu Leu His Leu Tyr Ala Val Ala Cys Ala
1   5   10   15
Arg Lys Gly Pro Phe Pro Asn Thr Lys Asp Leu Ser Gly Trp Thr Pro
            20   25   30
Ser Ser Gly Arg Glu Glu Leu Trp Lys Gly Lys Arg Ala Ala Ala Ala
        35   40   45
Thr Arg Asn Pro Leu Val Leu Thr Gly Leu Gly Ser Pro Ser Ala Arg
    50   55   60
Leu *
65

<210> 2006
<211> 46
<212> PRT
<213> Homo sapiens

<400> 2006
Met Leu Val Pro Thr Phe Phe Leu Leu Ser Leu Leu Asp Gln Ser Cys
1   5   10   15
Leu Ser Ile Cys Val Ser Gln Asp Tyr Phe Ser Ser Ile Val Val Gln
            20   25   30
Ile Arg Gln Ile Gly Ser Leu Cys Leu Asn Lys Ser Leu *
        35   40   45

<210> 2007
<211> 87
<212> PRT
<213> Homo sapiens

<400> 2007
Met Pro Thr Leu Ala Lys Trp Ile Leu Ser Leu Ser Met Thr Ser Thr
1   5   10   15

```
Thr Trp Ser Pro Cys Ser Ser Met Ile Pro Leu Met Ala Ser Ser Thr
            20                  25                  30
Ala Pro Ser Arg Leu Arg Thr Gly Ser Leu Pro Ser Met Thr Ile Pro
        35                  40                  45
Ser Pro Ser Arg Arg Ser Glu Ile Pro Pro Lys Ser Ser Gly Val Met
    50                  55                  60
Pro Ala Leu Ile Ile Leu Trp Arg Pro Pro Ala Ser Leu Pro Ala Trp
65                  70                  75                  80
Arg Arg Leu Gly Ile Thr  *
                85  86
```

<210> 2008
<211> 58
<212> PRT
<213> Homo sapiens

<400> 2008

```
Met Pro Ala Ile Val Val Phe Leu Phe Cys Phe Val Ile Ser Asp Gly
 1               5                  10                  15
Leu Thr Leu Ser Pro Arg Leu Asp Cys Thr Gly Leu Asn Leu Leu Ser
            20                  25                  30
Ser Ser Asp Arg Pro Thr Ser Ala Ser Pro Val Ala Gly Thr Ile Ala
        35                  40                  45
Val Gln His His Ala Trp Leu Ile Phe  *
    50                  55      57
```

<210> 2009
<211> 46
<212> PRT
<213> Homo sapiens

<400> 2009

```
Met Leu Met Tyr Met Phe Tyr Val Leu Pro Phe Cys Gly Leu Ala Ala
 1               5                  10                  15
Tyr Ala Leu Thr Phe Pro Gly Cys Ser Trp Leu Pro Asp Trp Ala Leu
            20                  25                  30
Val Phe Ala Gly Gly Ile Gly Gln Ala Gln Phe Ser His Met
        35                  40                  45  46
```

<210> 2010
<211> 235
<212> PRT
<213> Homo sapiens

<400> 2010

```
Met Glu Leu Gly Cys Trp Thr Gln Leu Gly Leu Thr Phe Leu Gln Leu
 1               5                  10                  15
Leu Leu Ile Ser Ser Leu Pro Arg Glu Tyr Thr Val Ile Asn Glu Ala
            20                  25                  30
Cys Pro Gly Ala Glu Trp Asn Ile Met Cys Arg Glu Cys Cys Glu Tyr
```

35 40 45
Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu Val Val Gly Tyr
50 55 60
Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu Cys Asp Ser Cys Leu
65 70 75 80
Ile His Pro Gly Cys Thr Ile Phe Glu Asn Cys Lys Ser Cys Arg Asn
85 90 95
Gly Ser Trp Gly Gly Thr Leu Asp Asp Phe Tyr Val Lys Gly Phe Tyr
100 105 110
Cys Ala Glu Cys Arg Ala Gly Trp Tyr Gly Gly Asp Cys Met Arg Cys
115 120 125
Gly Gln Val Leu Arg Ala Pro Lys Gly Gln Ile Leu Leu Glu Ser Tyr
130 135 140
Pro Leu Asn Ala His Cys Glu Trp Thr Ile His Ala Lys Pro Gly Phe
145 150 155 160
Val Ile Gln Leu Arg Phe Val Met Leu Ser Leu Glu Phe Asp Tyr Met
165 170 175
Cys Gln Tyr Asp Tyr Val Glu Gly Cys Asp Gly Asp Asn Arg Asp Gly
180 185 190
His Ile Ile Lys Arg Val Cys Gly Asn Glu Arg Ala Ala Pro Ile His
195 200 205
Asn Ile Arg Ile Leu Thr Ser Arg Pro Phe Pro Leu Pro Gly Leu Ser
210 215 220
Lys Ile Leu Thr Gly Phe His Ala Pro Phe *
225 230 234

<210> 2011
<211> 61
<212> PRT
<213> Homo sapiens

<400> 2011
Met Val Phe Ala Trp Gly Leu Ala Val Asn Lys Thr Ser Leu Val Pro
1 5 10 15
Ile Phe Met Asp Leu Ser Leu Ala Gly Lys Ile Tyr Ile Lys Gln Arg
20 25 30
Met Arg Met Glu Glu Asn Leu Leu Gly Asp Asn Glu Val Lys Glu Glu
35 40 45
Lys Asp Gln Ala Val Lys Trp Gln Thr Leu Arg Trp *
50 55 60

<210> 2012
<211> 107
<212> PRT
<213> Homo sapiens

<400> 2012
Met Ile Arg Cys Gly Leu Ala Cys Glu Arg Cys Arg Trp Phe Leu Thr
1 5 10 15
Leu Leu Leu Leu Ser Ala Ile Ala Phe Asp Ile Ile Ala Leu Ala Gly
20 25 30
Arg Gly Trp Leu Gln Ser Ser Asp Arg Val Gln Thr Ser Ser Leu Trp
35 40 45

Arg Arg Cys Phe Leu Pro Gln Gly Arg Arg Arg Arg Gln Arg Val Leu
50 55 60
Arg Gly Arg Leu Pro Gln Pro His Gly Val Arg Val Gly Ser Ser Ser
65 70 75 80
Ala Ala Met Leu Phe Trp Gly Val Ser Ile Leu Glu Ile Cys Phe Ile
85 90 95
Leu Ser Phe Phe Val Leu Cys Val Pro Gln Ile
100 105 107

<210> 2013
<211> 67
<212> PRT
<213> Homo sapiens

<400> 2013
Met Gly Val Val Leu Tyr Val Leu Val Cys Gly Ala Leu Pro Phe Asp
1 5 10 15
Gly Pro Thr Leu Pro Ile Leu Arg Gln Arg Val Leu Gly Arg Lys Ile
20 25 30
Pro Asp Ser Val Phe His Val Arg Arg Leu Arg Ala Pro Tyr Pro Lys
35 40 45
Asp Val Gly Pro Arg Pro Ile Gln Thr Ala Asn His Ser Pro Asn Gln
50 55 60
Gly Ala *
65 66

<210> 2014
<211> 59
<212> PRT
<213> Homo sapiens

<400> 2014
Met Phe Leu Arg Phe Pro Leu Arg Phe Gly Ile Leu Ala Asp Lys Leu
1 5 10 15
Ile Leu Tyr Lys Ala Ser His Phe Thr Met Leu Ser Val Pro Gly Leu
20 25 30
Tyr Leu Ser Thr Leu Leu Glu Gly Ile Phe Ile Leu Lys Lys Leu Ser
35 40 45
Phe Met Arg Arg Met Gly Val His Ala Thr *
50 55 58

<210> 2015
<211> 55
<212> PRT
<213> Homo sapiens

<400> 2015
Met Val Arg Leu Gln Val Leu Val Leu Val Phe Arg Val Val Gly Ser
1 5 10 15
Gln Gln Met Leu Arg Gln Gly Ala Ala Gly Ala Arg Ser His Arg Val

```
            20                  25                  30
Leu Ala Ser Leu His Phe Gln His Gly Phe Gly Thr Phe His Thr Pro
        35                  40                  45
Ala Arg Ala Gly Gly Ser Glu
    50                  55


     <210> 2016
     <211> 64
     <212> PRT
     <213> Homo sapiens


     <400> 2016
Met Ser Leu Arg Phe Cys Phe Cys Leu Pro Val Cys Pro Ser Leu Pro
  1               5                  10                  15
Ile Ser Val Phe His Val Phe Leu Ser Val Ser Asp His Pro Val Ser
            20                  25                  30
Leu Cys Leu Thr Val Ser Gly His Glu Met Ser Val Ile Val Ala Arg
        35                  40                  45
Phe Thr Leu Ser Leu Tyr Leu Phe Pro Leu Arg Ser Gly Ile Ser  *
    50                  55                  60          63


     <210> 2017
     <211> 58
     <212> PRT
     <213> Homo sapiens


     <400> 2017
Met Ile Leu Leu Leu Ser Thr Phe Phe Cys Cys Phe Arg Glu Asp Ser
  1               5                  10                  15
Cys Phe Tyr Lys Lys Tyr Val Gly Leu Val Gln Trp Leu Met Pro Val
            20                  25                  30
Ile Pro Ala Leu Trp Glu Ala Lys Val Gly Gly Ser Leu Glu Val Trp
        35                  40                  45
Ser Ser Arg Pro Ala Trp Pro Ile Arg  *
    50                  55      57


     <210> 2018
     <211> 66
     <212> PRT
     <213> Homo sapiens


     <400> 2018
Met Leu His Ile Ser Ser Ala Phe His Cys Tyr Ala Phe Leu Pro Leu
  1               5                  10                  15
Phe Ala Leu Thr His Asn Phe Ile Phe Leu Phe Tyr Leu Leu Ser Leu
            20                  25                  30
Ser Pro Lys Leu Glu Cys Lys Phe Gln Glu Gly Arg Asp Phe Tyr Leu
        35                  40                  45
Phe Phe Phe Val Phe Pro Ile Phe Trp His Val Trp His Arg Lys Gly
    50                  55                  60
```

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PATENT COOPERATION TREATY

PCT

DECLARATION OF NON-ESTABLISHMENT OF INTERNATIONAL SEARCH REPORT

(PCT Article 17(2)(a), Rule 13*ter*.1(c) and 39)

Applicant's or agent's file reference 21272-018	**IMPORTANT DECLARATION**	Date of mailing (day/month/year) 27 JUN 2001
International application No. PCT/US01/02687	International filing date *(day/month/year)* 25 January 2001 (25.01.2001)	(Earliest) Priority date *(day/month/year)* 25 January 2000 (25.01.2000)
International Patent Classification (IPC) or both national classification and IPC IPC(7): C12P 21/06 and US Cl.: 435/69.1		
Applicant HYSEQ, INC.		

This International Searching Authority hereby declares, according to Article 17(2)(a), that **no international search report will be established** on the international application for the reasons indicated below.

1. ☐ The subject matter of the international application relates to:
   - a. ☐ scientific theories.
   - b. ☐ mathematical theories
   - c. ☐ plant varieties.
   - d. ☐ animal varieties.
   - e. ☐ essential biological processes for the production of plants and animals, other than microbiological processes and the products of such processes.
   - f. ☐ schemes, rules or methods of doing business.
   - g. ☐ schemes, rules or methods of performing purely mental acts.
   - h. ☐ schemes, rules or methods of playing games.
   - i. ☐ methods for treatment of the human body by surgery or therapy.
   - j. ☐ methods for treatment of the animal body by surgery or therapy.
   - k. ☐ diagnostic methods practised on the human or animal body.
   - l. ☐ mere presentations of information.
   - m. ☐ computer programs for which this International Searching Authority is not equipped to search prior art.

2. ☒ The failure of the following parts of the international application to comply with prescribed requirements prevents a meaningful search from being carried out:
   ☐ the description ☒ the claims ☐ the drawings

3. ☒ The failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions prevents a meaningful search from being carried out:
   - ☐ the written form has not been furnished or does not comply with the standard.
   - ☒ the computer readable form has not been furnished or does not comply with the standard.

4. Further comments:

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer Young J. Kim

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